INNER-CITY ASTHMA PROGRAM

A Guide for Helping Children with Asthma

Based on the program researched, developed and implemented by the

National Cooperative Inner-City Asthma Study

and funded by the

National Institute of Allergy and Infectious Diseases

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Session materials are adapted from *You Can Control Asthma: A Book for the Family* and *You Can Control Asthma: A Book for Kids* by Susan Schneider, M.P.H. and Michele Richard, M.P.H. These books are based upon the results of extensive testing with low-literate inner-city families. They were used in both inner-city asthma projects at Georgetown University, and for the *A+ Asthma Club* program, in adapted format. The "Family Book" and "Child Book" were obtained from the Asthma and Allergy Foundation of America.

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For additional information/materials contact: Division of Allergy, Immunology and Transplantation, National Institute of Allergy and Infectious Disease, NIH. (301) 496-7353.

To order *You Can Control Asthma*, contact the Asthma and Allergy Foundation of America, 1-800-778-2232.

***Roxy to the Rescue* was developed by the Media Development Center, New England Research Institutes, Inc., 9 Galen Street, Watertown, MA 02172. (617) 923-7747. To order copies, contact Milner Fenwick, Inc. at 1-800-432-8433.**

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How to Use This Guide

What does this manual contain?

- Clear outline of goals and program components
- Specific guidelines for each intervention phase
- Basic training in asthma education for Asthma Counselors (AC)
- Examples of role plays, group activities
- Special needs of inner-city communities
- Appendix of documents, handouts, and references

Tips for

- working with children
- promoting rapport
- achieving and maintaining good participation
- providing a positive experience

To whom is this program applicable?

While this 6 to 12 month program was originally tested and implemented using primarily minority children aged 5 to 11, it is recommended for minority children aged 6 to 12 years with moderate to severe asthma who are not under the care of an allergist or asthma specialist. *Note:* This manual provides guidelines for adjusting the sessions for children aged 5 to 8.

What is needed to run this program?

Below is an outline of required staff and materials. These estimates will vary depending on the program's size, scope, and location, as well as on the experience of the interventionist.

Staff

- Asthma Counselor, who is a specially trained masters level social worker
- Clinical supervision for social work and medical training
- Support staff to coordinate reminder letters, telephone calls, baby-sitting, and provide group assistance

Space

- a large room for group sessions
- office for individual sessions
- baby-sitting space

Supplies

- Child and Family books
- mattress covers
- spacers, peak flow meters
- refreshments
- writing materials (see group sessions)
- video equipment (optional)

Office equipment

- telephone(s)
- filing cabinets
- fax machine (optional)
- computer and printer

BACKGROUND READING AND RESOURCES

You Can Control Asthma: A Book for the Family, Georgetown University, 1994

National Asthma Education Program's Expert Panel Report, Executive Summary: Guidelines for the Diagnosis and Management of Asthma, NIH, 1991.

Children with Asthma: A Manual for Parents by Thomas Plaut, M.D., 1988.

Caveats:

The NCICAS intervention successfully reduced the number of symptom days among the participant group. While future analyses may identify a subset for whom the intervention was most successful, this study's design does not assess the role of individual components. Where possible, the intervention should be implemented in its entirety.

Note: When designing and staffing a single-site program, keep in mind key differences between a multi-center intervention study vs. actual program implementation. Many resources listed may not be available or required outside of a research protocol.

- The NCICAS was implemented over 14 months. The core components occurred during the first 2 months, followed by a year-long intervention and evaluation period. For simplicity, this manual refers to the program as a year-long intervention.

- Due to time and staffing constraints, the child sessions were not part of the intensive two-month core. This manual suggests that it might be more efficient to conduct the child and adult groups within a shorter time frame.

- NCICAS Asthma Counselors were supervised at each site by Principal Investigators (P.I.s), physicians with extensive experience in treating childhood asthma. P.I.s were available for questions, training and referrals. The expertise of a senior social worker or child psychologist was also available to Asthma Counselors at most sites.

- All Asthma Counselors attended bi-weekly conference calls with the Data Coordinating Center and NIAID to discuss protocol problems and client difficulties with the other social workers.

- For the multi-center study, each participant (control and intervention group) completed bi-monthly telephone surveys conducted by an independent survey research center (SRC). Where possible, the SRC updated participants' addresses and telephone numbers to be transferred via computer to the sites for use by the Asthma Counselor. Participants were paid $10 for each completed survey, perhaps contributing to the 95% one-year retention rate.

- Each full-time Asthma Counselor was assigned 60 clients. Sites with part-time Asthma Counselors divided caseloads accordingly.

- The intervention does not replace good medical care; therefore, an acceptable medication plan is an important tool for effective asthma management. While Asthma Counselors should facilitate obtaining the plans, it is crucial that they be carefully evaluated by a physician who is aware of the program's goals and limitations.

- The NCICAS intervention was implemented in three sites with Spanish-speaking participants. Asthma Counselors at these sites were bilingual and extensively experienced social workers in the Hispanic community. While the Asthma Counselor need not be Hispanic, he/she must be well-versed in the unique issues confronting this community, as well as in accessing medical and community resources for participants who do not speak English as their first language.

- Prior to beginning the NCICAS intervention, all participants completed an extensive two-hour interview which included adult and child questionnaires, as well as pulmonary function and skin testing. These data helped determine relationships between suspected risk factors and asthma morbidity. Asthma Counselors received a detailed report of these findings prior to meeting with the family, so that the intervention could be specifically tailored to each family's needs and risk factors. Without a research protocol, this type of assessment is unlikely.

Program Background

Phase I of NCICAS was a cross-sectional study of 4 to 9 year old asthmatic inner-city children. During the baseline visit, primary caretakers and children completed an extensive interview. Children underwent pulmonary function and skin testing, as well as blood and urine sample collection.

Retrospective data were collected about utilization and impact on daily life over the three months prior to baseline, and frequency of symptoms over the previous two weeks. A home survey (including the collection of dust samples for dust mite, cockroach and cat antigen analysis, as well as measurements of nitrogen dioxide exposure) was conducted to determine asthma morbidity and health care utilization during the three-month period. Follow-up telephone calls to participants were completed at three, six, and nine months after the baseline assessment.

Based on the Phase I finding, the Phase II intervention was designed as a multifaceted, multimodal intervention, addressing the wide range of problems that contibute to asthma morbidity. Because not all families exhibited problems in each of these areas, the intervention was tailored to individual child and family needs.

A standardized assessment tool was developed, using questions from Phase I. Those questions that most successfully identifed the four problems that would be intervened upon (i.e. access to primary care for asthma, adherence, behavior, environment) were used to identify the presence of risk factors. Children who scored over a threshold level of points on any particular risk factors were assigned to receive the module(s) designed to address those risks.

Social workers are uniquely qualified to understand the complex lives of inner-city families, to assist in problem solving strategies and to develop appropriate interventions to deal with new problems as they arise.

Developers of the NCICAS intervention attempted to abstract and utilize the best elements of prior interventions, while extending them beyond their limitations. A key component was the Asthma Counselor who not only assisted in individually tailoring the intervention, but worked closely with families over an extended period of time, in order to address a wide variety of problems. In working with the families, Asthma Counselors used a problem-solving, empowerment approach, essential in helping families develop the skills necessary to successfully collaborate with physicians, work with schools, and developing better care strategies that promote acceptance of, and adherence to, a mutually acceptable treatment program.

The intervention was organized around a core, which included many features of previously tested programs of education and self-management.

Social workers are uniquely qualified to understand the complex lives of inner-city families, to assist in problem solving strategies and to develop appropriate interventions to deal with new problems as they arise. In this intervention, the social workers were able to adapt to the Asthma Counselor role and complemented the efforts other health care providers in attempts to establish a comprehensive treatment regimen.

The intervention was organized around a core, which included many features of previously tested programs of education and self-management. The first two months of the intervention were semi-structured, involving both group and individual training sessions with the child and family. Asthma Counselor activities were then tailored to each family, focusing on environmental, medical or special adherence training, as needed. Problems that might necessitate treatment but could not be dealt with directly were handled through referral. Individual contacts both by phone and in person continued throughout the intervention year.

Program Goals

It is important to note that asthma education was not the main focus of the intervention, since a high-level of asthma knowledge was already documented in the target population. The primary purpose of the intervention was to translate asthma knowledge into skills and behavioral changes that would reduce asthma morbidity. The overall goal of the Inner-City Asthma Program is to decrease the severity and frequency of asthma symptoms in children by encouraging them, together with their family members (or other caregivers) to assume direct responsibility for controlling symptoms.

The severity and cause of each child's asthma varies, as does each family's capacity to take responsibility for managing the disease. Differences include access to regular medical care, care by a physician knowledgeable about recent advances in asthma treatment, a home environment that does not aggravate asthma, and family members who are knowledgeable, skilled and supportive. This program is uniquely designed to work with these individual differences in order to achieve the greatest possible level of improvement for each child. The following goals shaped the content and approach of this program.

ASTHMA TREATMENT

- Regular doctor visits
- Maintainence of normal activities
- Participation in sport(s) of choice
- Uninterrupted night sleep
- Effective drug treatment without adverse effects
- Decrease frequency and severity of attacks; handle attacks at home
- Normal peak flow rates

ASTHMA MANAGEMENT

- Increase the family's and child's confidence that they can control asthma
- Identify and avoid asthma attack "triggers"
- Control the indoor environment to the greatest extent possible
- Recognize signs of an impending attack ("clues")
- Treat attacks early by following physician-designed medicine plan
- Take medicines correctly
- Recognize and reporting adverse effects of medicines
- Seek help from the doctor when needed
- Discussing problems with family and doctor

IMPROVING COMMUNICATION SKILLS

- Discuss problems, express feelings and ask questions of family and doctor
- Empower people to make good decisions and choices regarding child's asthma
- Talk with other family members, friends and teachers about asthma

Program Outline

The Inner-City Asthma Program was originally designed as a one year intervention program of group and individual sessions for caretakers and children with asthma. In other settings, it may be possible to shorten the program to six to eight months. At the start, the Asthma Counselor and study participants should establish a list of goals. Depending on the time it takes to achieve these goals, the Asthma Counselor may be able to decrease frequency of contact, using periodic telephone calls to monitor the child's health.

Group and Individual Components

The following section briefly describes the program's group and individual components, each of which this manual addresses in greater detail in later sections.

Group Session Activities

Adult and child group sessions are conducted during the first few months of the program. These sessions provide the foundation of asthma education and skills training that will be built upon in subsequent, individualized sessions.

Adult Group Session 1

Adult group sessions are designed for the person(s) who share primary contact with and responsiblity for the child's asthma. Using lecture, group discussion, and role playing, topics include:

- an overview of the nature of asthma
- a presentation of the goals of the program's treatment expectations
- improving communication with physicians
- identifying factors that start asthma attacks
- general problem-solving strategies
- environmental contributors

Adult Group Session 2

Here, further discussion of asthma-related physiology emphasizes knowledge that encourages adherence to the program.
Additional topics include:

- the role and function of asthma medicines
- a discussion of asthma medicines and sports
- tips for maintaining a medicine plan

Children's Group Session 1

Children's group sessions concentrate on issues similar to those addressed in the adult group sessions, with topics geared to the appropriate developmental level of the child. Role-playing activities, discussion, and games encourage participation and facilitate learning. Children's Group Session 1 covers introductory information on:

- the nature of asthma
- recognition of their own asthma clues
- handling an asthma attack
- taking medicine correctly

Children's Group Session 2

This session focuses on controlling asthma and becoming symptom-free by:

- identifying asthma "triggers"
- controlling environment(s)
- watching the animated video, *Roxy to the Rescue,* which portrays a child's experience with asthma in ways with which children can identify.

Individual Session Activities

Early in the program, the Asthma Counselor meets with the child and caretaker(s) for an individual family session that:

- clarifies and individualizes issues discussed in adult and children's group sessions.
- provides a detailed assessment of needs and risk factors covering medical, environmental, and psychosocial areas.

If possible, the child should be scheduled for a skin test to determine the presence of allergies.

The Asthma Counselor contacts the family's primary physician to obtain detailed medical information, request a detailed medical plan, and notify the provider of the child's participation in the program. If the child does not have a primary physician, a referral should be made. **It is important to emphasize to the participants that this program does not replace quality medical care.**

The Asthma Counselor works with the caretaker(s) and child to formulate a care plan which will be implemented, monitored, and adjusted as needed, throughout the follow-up period.

The Asthma Counselor will address home environment problems such as smoking and mold. Children are given special mattress and pillow covers to reduce exposure to dust mites. Caretakers who smoke are referred to smoking cessation programs and receive tips for reducing the child's exposure to passive smoke. Handouts detailing methods for controlling mold, mites and raoches are also distributed. (See appendix.)

Individual Follow-Up Sessions

For the remainder of the program, the Asthma Counselor maintains monthly telephone contact with each family, striving for at least one in-person visit with the family every other month. More frequent family visits should be determined by the Asthma Counselor on an individual basis.

Issues which require immediate attention (e.g., problems with a care plan) or require "special" interventions (school, environment, adherence, mental health referral) should be targeted as quickly as possible.

Special Intervention Sessions

This section describes special sessionss on environment, program adherence, and school difficulties.

Environmental Session

Families of children with home cockroach problems should be trained in household maintenance (i.e. sealing cracks in walls, eliminating roach food and water sources). This should then be followed by a total home pest extermination.

Adherence Session

Families who experience adherence problems should spend two sessions with the Asthma Counselor early in the follow-up period, in order to simplify medication scheduling and discuss problems such as medicine side-effects, and/or refusal to take medicines.

School Issues

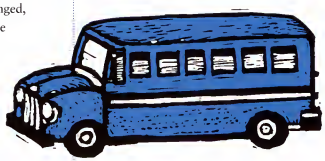
Occasionally, families have problems administering medications during school hours, or teachers must be taught to assist the child with asthma. A school visit with the Asthma Counselor and caretaker may be arranged, along with ongoing consultation to the schools as needed.

Role of the Asthma Counselor

By combining a solid background in social work with specific training for asthma education and management, the Asthma Counselor embodies the program's multifaceted, empowerment approach.

Due to the nature and diversity of problems that influence asthma management in the inner-city, it was felt that Asthma Counselors who are masters level social workers may possess the widest range of counseling, assessment, and intervention skills necessary to respond to, and make appropriate referrals for, many non-asthma related issues which may arise during this type of intervention. Other professionals — such as public health nurses, health educators, and bachelors-level social workers — can also be very effective if they possess similar intervention skills.

By limiting their non-asthma related work, Asthma Counselors ensure that their expertise is applied to the needs and problems that affect asthma morbidity. Crisis intervention issues that do not directly affect the child's asthma should be handled by referral rather than by direct intervention by the Asthma Counselor.



The NCICAS intervention did not include home visits by the Asthma Counselors since they were not necessary to achieving the study's goals and required more time than the Asthma Counselors' caseloads allowed. The decision on including home visits in the intervention should be guided by each program's resources and specific goals.

Asthma Counselors should help empower families to more assertively and effectively deal with physicians or service agencies. While they may choose to make telephone calls or write letters on behalf of families, it is beyond the scope of this program for the Asthma Counselors to attend meetings with service agencies.

Referrals

For some families, problems may be identified that require an intervention that is beyond the scope of the Asthma Counselor's responsibility within this program. The Asthma Counselor should discuss such problems with the family, and attempt to provide an appropriate referral. Efforts should also be made to connect caretakers with smoking cessation programs when appropriate and desired.

In the NCICAS Intervention, topics for referrals included psychological and/or behavior problems, smoking cessation, child care, financial or insurance assistance, housing, food, legal, health and medical problems, after-school care, tutoring, summer camp, child abuse or neglect, drug/alcohol abuse, domestic violence and sexual abuse.

Asthma Counselor Training

While the NCICAS intervention emphasized problem solving skills and patient empowerment over medical intervention, it is essential that the Asthma Counselor thoroughly understand the terminology and medications used in asthma treatment. Knowledge of MDI's (metered dose inhalers), spacers and environmental control is more important than the physiology. Even for those with a clinical background, it is important to have up-to-date information on current practices in inner-city asthma care.

Knowledge of MDI's, spacers and environmental control is more important than the physiology.

Prior to the start of the NCICAS Intervention, each Asthma Counselor spent several weeks observing care in inner-city asthma clinics and emergency rooms. Under the direction of the Principal Investigator, they reviewed current literature and discussed treatment issues with patients and physicians.

Asthma Counselors also created current listings of community resources within the study area, and were encouraged to establish relationships with referral sources prior to beginning the intervention. These listings were reviewed by supervisors to ensure that they adequately addressed the potential needs of this population.

The Asthma Counselors attended three separate, centrally-held training sessions on interviewing techniques, handling difficult participants, problems managing groups, cultural sensitivity, and documenting client contacts. One session was exclusively devoted to medical training — including asthma physiology, use of emergency and preventative medicines and current issues in asthma care.

Monitoring Program Quality

Since the NCICAS was a multi-center study, each Asthma Counselor was required to keep extensive notes on the frequency and content of each contact with participants.

Organizers should devise their own mechanisms for monitoring visit contacts and study activities.

Standardized forms were completed and entered by computer into the data management system, enabling Asthma Counselors and Study Coordinators to run reports summarizing the number and length of visits, participants who were overdue for visits, and a comparison of the range of topics covered, relative to the risk factors identified at baseline. Additional reports supplied the Asthma Counselor with a list of participants whose baseline data indicated a need for special interventions (such as cockroach extermination). These reports allowed supervisors and Asthma Counselors to monitor the quality and consistency of the intervention across sites.

This data management system also possessed scheduling capabilities generally unavailable to single-site programs. Organizers should devise their own mechanisms for monitoring visit contacts and study activities.

Group sessions were occasionally audio or video taped and reviewed by senior study personnel for quality control purposes. Asthma Couselors received feedback on their presentations so that if necessary, adjustments could be made. A similar review is recommended with this intervention, to ensure that information is presented accurately and effectively. Additional training may be necessary throughout the course of the intervention.

Getting Started

The Inner-City Asthma Program provides a broad foundation of asthma education and skills training for caretakers and children. Throughout the program—in both group and individual session—the Asthma Counselor helps families learn more about controlling asthma by conveying complex information in a clear, concise, empathetic manner. The Asthma Counselor must create a warm and comfortable learning environment that encourages everyone to participate.

General Teaching and Listening Skills

The following section discusses general teaching and listening skills for the Asthma Counselor to use when working with families during group and individual sessions.

Be an active and caring listener

There are many ways in which listening skills show people that you care and encourage their participation:

- Pay attention.
- Nod when someone talks, or say, "I see" or "uh huh".
- Sit down with people — don't stand over them.
- Do not interrupt.
- Respect what each person says, even if you disagree. Just keep listening!

Ask questions that require more than a yes or no answer

- "What makes you feel that way?"
- "What are you feeling now?"
- "What do you think could be the reason?"

Help people recognize their emotions

- "It sounds like you are pretty angry."
- "It sounds like you feel really proud of that."

Start from the child's or caretaker's level, and build from there

- Address concerns before launching into explanations of what people "should" know. What **you** think is important about a child's asthma may not be the child or caretaker's primary concern. During the first group sessions, elicit their fears and misconceptions about asthma.

Caretaker concerns that may be conveyed to the child include:

- Will my child become addicted to asthma medicines?
- Aren't steroids those things athletes take that have bad side effects?
- Will the medicines stop working over time?
- Could my child overdose on medicine that would make him really sick or even kill him?
- Even though I know what to do, I don't think I could do it.

Some common concerns of children include:

- Will I be able to play team sports or play at all?
- Will it go away? Will I grow out of it?
- Asthma attacks just come out of nowhere. Will I be able to handle an attack at home? At school? At the playground?

When preparing for subsequent sessions, refer back to your notes from previous sessions so that you can address specific concerns that were raised.

Use the 3 R's:
Rehearse, Repeat, Reinforce

REHEARSE:

Demonstrate skills to the child. Use pictures as you demonstrate. Ask people to demonstrate back to you what they have learned, and to each other.

REPEAT:

Repeat key points 3 times during a session. Have more than one person repeat these points

REINFORCE:

Each subsequent session should reinforce what you have asked the person to do

Watch people's expressions

When reviewing flipchart or book information, keep an eye out for worred or puzzled expressions. Ask:

- What concerns you (or bothers you) most about _____ ?
- Is there anything on your mind that you want to ask me?
- Is there anything I just said (or that we just read) that you are not happy with, or want to talk more about?

Promote understanding and learning

Teach not only what must be done — **but how to do it.** (e.g. in-depth knowledge of lung anatomy won't stop an attack, but proper use of an inhaler will). Keep explanations brief and to-the-point. For example, saying "If you use the inhaler correctly, more medicine gets in to do its work" is more useful than long-winded explanations of how medicines help decrease swelling, relax muscles etc. Demonstrate and practice how to sit and relax rather than simply saying that relaxing will help if an attack starts.

Write clearly

- Point out difficult words and read them out loud to show how they are written.
- Print in large letters. Experiment on your own with different sizes to test legibility at different distances
- Use traditional format for all correspondence
- Keep it simple, with abundant white space.
- Use upper and lowercase letters (not all capitals).
- Do not abbreviate. ("etc.", "Rx", "#")
- Do not use contractions. (Write "do not", "can not")
- For emphasis, underline rather than highlight

Use words that can be clearly understood, without too much medical or asthma jargon.

IT IS BEST TO SAY:	INSTEAD OF SAYING:
people with asthma	asthmatics
things that start attacks	triggers
asthma clues	signs of asthma, early warning signs
asthma attack	asthma episode
handling or controlling asthma	managing asthma
breathing meter, your meter	peak flow monitoring
how medicines make you feel	side effects
how much to take	dose
how much medicine each person can take	tolerate medicine
wet stuff you cough up	mucus
breathing machine, mist machine	nebulizer
thing you are allergic to	allergen
bothers you	irritate *(physically)*
upsets you	irritate *(emotionally)*
swollen	inflammation
medicine that opens the airways fast	bronchodilator

These common words may mean something different to children.

BEST TO SAY:	INSTEAD OF SAYING:
stay away from	avoid *(may mean "ignore")*
sick or have a cold	have an infection *(this means an infected cut)*
running, playing and sports	exercise *(this may mean calisthenics)*
making choices	decision-making
join in	participate
all the time	always
let it dry on a towel	let it air dry *(this means using a fan to some)*

Be careful to avoid words or expressions that make assumptions about a child's living situation that makes him/her feel left out.

BEST TO SAY:	INSTEAD OF SAYING:
at home	at your house
people in your family	your caretakers, mother, father
the doctor or nurse	your doctor
the room where you sleep	your bedroom

Encourage people to share information with family, friends, teachers and doctors

Family involvement is critical to the program's success. Encourage people to:

- try out the activities with their families
- bring questions back from the family
- show new skills to the family
- use what they have learned

Focus on empowerment and confidence-building skills

Remember these five steps to behavior change:

1. **Know what to do and how to do it.**
2. **Believe it can be done.**
3. **Try it once.**
4. **Get reinforcement.**
5. **Continue to do it.**

Special Issues When Working with Young Children

Asthma education can be confusing at any age. Children who have problems understanding questions and concepts may find the group discussion format intimidating or distracting.

Children may need extra help with:

...expressing themselves and listening to others

Young children often take a long time to express themselves or "get to the point." They get easily sidetracked or off on long-winded tangents. They have difficulty listening, and often repeat what someone else has just said.

Respectfully, but firmly, move things along. ("O.K., let's hear from someone else.") You may have to limit the number of students who answer any one question, or gently cut off any student who has gotten off the track. ("Yes, that can happen, but now let's talk about what happens at home.")

...going from the general to the personal

Young children have trouble going from the general to the personal and vice versa. They may think that all the asthma clues listed in their handouts must be their asthma clues, or that all things listed in the handouts start their asthma. They need help understanding some-things apply to them while others do not, and that what applies to them might not apply to someone else and vice-versa. The Asthma Counselor must constantly reinforce the concept that each child's asthma is different.

...understanding cause and effect

Young children (especially those under 8) have difficulty understanding cause and effect. For example, a boy observes that when you bleed and then wipe the blood away, you see a cut. He concludes that since the bleeding comes before the cut, bleeding causes cuts.

Explicitly explain the cause and effect relationship to young children — do not expect them to figure it out using logic. During Session 1, for example, you can spell out a sequence of events that cause an asthma attack. (i.e. first your breathing is fine, then you get around something that bothers your lungs, then you start to feel your asthma clues and then, if you do not do anything about the clues, you get an asthma attack.)

...understanding how the body works

Young children are often very confused about the body's systems and how they work. While they may have reasons to identify the throat, heart, brain, stomach, and blood, they are less likely to be familiar with lungs. In past experiences with children with asthma, many pointed to their throats when asked where their lungs were. When shown a picture of a doctor listening to a child's chest with a stethoscope, many children insisted that the doctor was listening to the heart, and emphatically denied that the doctor could be listening to the lungs.

Keep anatomical explanations as simple as possible. Focus on what children can actually see, so that they can establish solid connections in their minds.

Keep anatomical explanations as simple as possible. Focus on what children can actually see, so that they can establish solid connections in their minds.

...reading and writing

Don't assume that age establishes reading and writing ability. When writing on the board or referring to written material, preface your remarks with something like "there may be words that people have a hard time reading." Instead of asking children to write, it may be easier if you write as they dictate.

Building the Foundation for a Successful Program

The relationship between the Asthma Counselor and family is, arguably, the most important element of the program. It determines the extent and quality of the family's involvement, and thereby, the degree to which the intervention will be successful. The term "Asthma Counselor" suggests a partnership approach to improving the child's asthma care. Past participants indicated that the terms "medical personnel," "case workers," or "advocates" brought up negative, authoritarian associations.

Here are some suggestions for increasing the caretakers' and childrens' interest and responsiveness to the program.

- Call it a "program" or a "club" for kids.
- Use logos, slogans and name tags to encourage group identity.
- Persuade families about the program benefits.
- Inspire excitement, commitment and involvement.
- Hold group sessions to foster support and community, as well as learning and sharing with others.

Group Session Preparation and Facilitation

Group sessions should be informal and highly interactive for everyone. Caretakers and children need time to talk about asthma, learning as much from each other as from you. The materials should supplement your sessions. They are not intended for self-use, although they are designed to help the caretaker continue working with the child at home. Children should be reminded that the games and activities are not homework or tests and they will not be graded.

Scheduling

In order for the intervention to succeed, participants must attend the sessions. Scheduling must take into account the needs for flexible hours, transportation, baby-sitting, and an accessible, convenient location. Make-up sessions may be a necessary option.

Facilities

- Hold sessions in rooms without thick dust or odors from paint, cleaners or car exhaust. Rooms should not be excessively cold or hot.
- If the room is very hot, try to open windows to bring down the temperature before children arrive.

- Desks or tables and a chalkboard are helpful, but not essential.

Preparation

The day before, review the notes and questions asked during earlier sessions. Note any promises that were made to follow-up on questions; bring extra copies of materials, etc.

Checklist for Group Sessions

- Confirm room availability
- Arrange baby-sitting/play area
- Prepare attendance list
- Write out simple directions to the room
- Call people to confirm time/place of meeting and provide directions
- Make signs with logo and arrows to post in hospital/building at strategic corners and doors
- Gather enough handouts for all caretakers
- Bring a few extra books
- Arrange for extra chairs if needed
- Review session notes and visual aids
- Prepare large newsprint pages for writing
- Have sample spacers, inhalers and peak flow meters ready to demonstrate
- Consider borrowing a home nebulizer with different styles of masks or mouthpieces
- Check functioning of placebo inhalers and spacers and practice using them so that everything "works" when you demonstrate.

Materials

The group sessions can be conducted with minimal supplies and equipment:

- Name tags
- Large sheets of newsprint, markers, tape
- Tee-shirts with the outline of lungs
- Sample asthma inhalers and spacers
- Incentives for children (pencils, stickers, etc.)
- A chalkboard and an overhead projector are helpful but not required.

When Time Runs Short During a Session

Sessions are planned for 45 to 90 minutes, depending on the age of the participants and size of the group. Be aware that arrival delays are unavoidable and that may not have the full time allotment in which to complete a session.

Be flexible. Keep track of time, keep moving and note participant interest level on a particular topic. While older children can complete the entire children's session with meaningful discussion in the allotted times, young children often need more time (which you can reserve in the next session).

Tips When Time is Short

Focus on the essentials and practice skills. Instead of asking open ended questions that encourage lengthy answers, describe a situation and ask for a response.

- "Who has ever had an asthma attack at school? When sleeping? At a relatives?"
- "Who has ever been to the doctor? To the hospital?"

Helpful Hints...

- ✔ **Offer Saturday and evening sessions**
- ✔ **To foster group support, try to schedule the same people in Group Sessions 1 & 2.**
- ✔ **Children should be divided into two levels: ages 5 to 8 and ages 9 to 11 in order to be more effective in group sessions.**
- ✔ **The ideal size for a group of young children (ages 5 to 8) is 6 to 8; for a group of older children (ages 9 to 11), 8 to 10 is ideal.**
- ✔ **Call the day before a session to confirm the family's attendance, reminding them of the date and time, and providing directions, parking, metro, bus, and taxi information as needed.**
- ✔ **Participants may need reminders to bring their "asthma books," medicines, medicine plans, etc. to sessions.**

Adult Group Session 1

Your Child Can Be Symptom Free

Goals

1. *Caretakers will state that they believe children with asthma can be symptom free.*
2. *Caretakers will be able to state three things that they must do so that their child is symptom free:*
   - *Figure out what starts the child's asthma and take corrective action*
   - *Develop a partnership with the child's doctor*
   - *Get a written medicine plan from the doctor and follow it*
3. *Caretakers will be able to state what they can do at home about smoking, dust, and pets*
4. *Caretakers will be able to list three things that help when communicating with physicians*

Schedule

- **Welcome/Introduction to Program** *(10 minutes)*
- **Group Introductions** *(15 minutes)*
- **Asthma Myths and Rumors** *(10 minutes)*
- **Things that Start Your Child's Asthma Attacks and What to Do About Them** *(30 minutes)*
- **Building a Partnership with the Doctor** *(15 minutes)*
- **Wrap Up** *(5 minutes)*

Materials

Handouts:
- Book for the Family
- Medicine Care Plan (blank)
- Name tags

Additional Materials:
- Visual aids such as flipcharts or overheads
- Felt markers
- Masking tape

Optional:
- Overhead projector with extension cord, three-prong adapter, and spare bulb

Welcome/Introduction

(10 minutes)

- Arrange chairs are in a circle so that people can see each other easily.
- As caretakers arrive, give each individual a name tag and a packet of materials.
- Mingle with people as they arrive, and encourage them to get refreshments prior to starting.

Begin by introducing yourself and the project with something like this:

"You already know a lot about asthma and you know your child better than anyone else. The purpose of this program is to help you develop the skills you need to help your child have fewer problems — and no symptoms from asthma. That means things like your child being able to run, play and go to school like other children. It means that you and your child should be able to sleep all night. Expect nothing less. If these things are not happening, the asthma is not under control.

"Why do we think your child can be free of asthma symptoms? Because although asthma hasn't changed that much over the years, many doctors understand it better now and the medicines are much better. There have been many discoveries in the last few years about asthma medicines — some doctors know a lot about these; others are just learning."

"To keep your child symptom free there are three things you need to do:"

1. **Figure out what starts your child's asthma attacks and take action**
2. **Get a written medicine plan now from the doctor and follow it.**
3. **Develop a partnership with your child's doctor so that he/she will follow your child over time.**

"Together we are going to work on learning more, building your confidence and helping you to do these things."

"And in the event your child DOES have an asthma attack, we will also help you learn what to do. You will learn to catch it early and stop an attack at home before it gets bad. You will learn the danger signs that mean you need to get your child to the hospital or the doctor."

"So when will we be learning these things? This program will include two group meetings and one individual family meeting over the next eight weeks. The focus of today's meeting will be on what you can do at home to prevent attacks and how you can start to build a relationship with your doctor. The focus of the next group meeting will be on following the medicine plan during an attack and to prevent attacks in the future. The focus of the individual sessions will be on problem solving, and will be different for each family. It will be scheduled at a convenient time for you and your child. Later there will be sessions for the children to get together and learn about asthma."

"There are a few things you need to know about me and my role as an Asthma Counselor. I am not a doctor. I can't tell you which medicines to switch to or exactly how much to take. You will have to talk with your doctor about that. I can help you practice talking with your doctor and help you learn to get your child to take your medicine the right way."

Group Introductions

(15 minutes)

"You have been chosen to join this group because you each have a child age 5 to 11, with moderate or severe asthma — so you have a lot in common. Please introduce yourself and tell us the name and age of your child with asthma, how long your child has had asthma and if anyone else in the family has asthma."

Asthma Myths and Rumors

(15 minutes)

This discussion of "myths and rumors" is intended to highlight basic facts about asthma while dispelling common misunderstandings. Introduce the discussion something like this:

"There are a lot of myths and rumors about asthma that I want to clear before we continue. Sometimes even people who work in hospitals or clinics have the wrong information. Sometimes people who have had asthma for many years have the wrong information. I want you to be able to give the right information to people in your family. Here are a few of the things I often hear..."

Proceed to read each myth, followed by the correct information.

Myth: Many people think they only have asthma when they have trouble breathing. They think that asthma comes and goes, day by day or week by week.

Response: No. People with asthma have it all the time for many years. When they have trouble breathing, they are having an asthma attack or an asthma flare-up. On those days, their asthma is not under control.

Myth: Many people think asthma is all in your head.

Response: No. It's in your lungs. Asthma is a disease — a breathing problem of the lungs. Asthma stays with people all the time, but asthma attacks come and go when the lungs are bothered. Because asthma is with you all the time, many children and adults take asthma medicine every day so their lungs are not bothered by things that start asthma attacks. People with asthma have sensitive lungs. When we talk about medicines in the next group session we will talk more about the lungs and how medicines can help.

Myth: Many people think asthma is an emotional disease; if you are an emotional person you get asthma.

Response: No. Emotions do not cause asthma. But, if you have already have asthma, crying, yelling or laughing hard can start an asthma attack. Have some of you noticed this with your child?

Myth: Many people think that all children will outgrow asthma.

Response: People have asthma for many years. Sometimes, when children grow up, their asthma is less severe — but we try not to say that all children will outgrow it. In fact, many times asthma does not get better as a child grows — and it sometimes gets even worse. If a child has asthma, the lungs will always be more sensitive than the lungs of people who do not have asthma.

Myth: Many people think you can't ever play sports if you have asthma.

Response: No. Many star athletes have asthma—Jackie Joyner Kersee, Amy van Dyken, Dominique Wilkens, Isaiah Thomas, and many Olympic stars. The secret is getting a good medicine plan from your doctor to prevent attacks.

Make a transition statement something like this:

"OK — Now that we are on the topic of smoke and pets, let's talk more about things that start asthma attacks and learn what you can do at home."

What Things Start Your Child's Asthma Attacks?

(5 minutes)

It may help to refer people to the appropriate pages in their books or use a visual aid such as overheads, a flipchart or a poster.

Tell the group that now you are going to talk about things they can do themselves to help their child. You are going to talk about things that start asthma attacks; some doctors call these things "triggers". That word confuses children — so we tend to say "things that start an asthma attack".

"Many people with asthma have allergies, but other people with asthma do not. How many people here have children with allergies?"

Ask the group what things start their children's attacks. Check off things as you go along. After the group finishes, make sure that everything was covered by saying something like:

"Figuring out exactly what things start asthma attacks for your child can be difficult. If your child has an asthma attack, try to remember — and write down — where your child was or what he/she was doing just before the attack. You have to be a bit of a detective. Ask your child what he or she thinks started it. Knowing what to do about these things and actually doing them is also difficult, but it can be done."

What to Do About the Things that Start Your Child's Asthma Attack

(20 minutes)

The purpose of this section is to introduce people to some of the more difficult issues they will face. Of course, you will follow up with families in counseling to help them prioritize tasks and overcome family-specific obstacles. Set an assertive, yet positive tone, while noting that families of children with asthma must tackle smoking, pets, bedroom dust, mold and cockroaches. Give them the confidence to believe they can do for themselves.

Remember that your sessions include a diverse group of people. Take advantage of the opportunity to hear how others overcome obstacles and actually implement some of those changes. This is the ideal time to reinforce positive efforts.

Using an interactive format, review the following key topics under "What to Do About the Things that Start Asthma Attacks". Present the information and get feedback with probing questions like:

- Has anyone here tried this?
- What seem to be the biggest problems doing this?
- Any tips for others?

Remember that your sessions include a diverse group of people. Take advantage of the opportunity to hear how others overcome obstacles and actually implement some of those changes.

The three issues of smoking, dust in the bedroom and pets are often the toughest to deal with for many families, so begin here:

Smoking

This is a major issue for some families. Caretakers don't believe that their child is bothered by an adult's smoking. Emphasize that smoke bothers the lungs of all children with asthma. Get support from the group, using humor where appropriate. Introduce people to the concept of small steps:

- start with not smoking around the child, in the car or in the child's bedroom
- discuss ways to ban all smoking in the home get people talking about how to handle another family member or partner who smokes.

Dust in the Bedroom

- Emphasize that where children sleep is where they spend most of their time. Emphasize that one of the single best investments they can make is a mattress and pillow cover.
- Ask for tips and frustrations regarding removing items from the bedroom, and advise on the necessity for weekly washing of bedding, picking up and vacuuming.
- Refer people to the list of appropriate and inappropriate chores for a child with asthma in the family book (i.e. no vacuuming or dusting).

Furry or Feathered Pets

Keep the following issues in mind and try to bring them out during the discussion:

- The best thing is to "find a new home" for the pet. Many people think you can live with furry pets or birds even if you are allergic to them and they start your asthma attacks. For example, they think that if the cat is just kept out of the child's sight, he/she won't be bothered.

- Emphasize that the dry saliva from the cat stays around for six months after a cat leaves a home. Some people also think that they can use special products to make the house or the animal less bothersome.
- Tell people that this is not true — if you are allergic to certain animals they will bother your asthma. Those special products really do not work well.

Many people think that since their doctor said the child wasn't allergic to dogs and/or cats, they can have one. For a child with moderate to severe asthma, we discourage this. Even if the child is not allergic to certain animals now, he/she can become allergic to pets after living with them — and by then, has probably formed a deep attachment.

Other pet issues that may arise include: problems visiting friends and/or sleeping at relatives homes where there are pets, using pets for protection, problems with resentment or anger at the child with asthma by other family members attached to the pets.

After reviewing smoking, bedroom dust, and pets, explain that that if a child is allergic to mold or cockroaches, you will spending extra time on that with them in individual counseling. Briefly, explain the following:

Roaches

Many people are allergic to roaches, so you must get the roaches, their body parts and droppings out of the home. (Provide details on roach extermination at the individual sessions.)

Mold

People must stop using humidifiers, clean up mildew and stay out of basement apartments and basements in general. In the winter, it may be necessary to use the humidifier if the home is exceptionally dry. (Static electricity is a sign that the air is too dry). If used, it should be cleaned frequently.

Even if the child is not allergic to certain animals now, he/she can become allergic to pets after living with them — and by then, has probably formed a deep attachment.

Conclude by referring people to the books to see what to do about other items — such as sprays and strong odors.

Building a Partnership With Your Doctor

(20 minutes)

Hold up a copy of the medicine plan and say something like this:

"As part of this project, we've asked doctors to fill out written medicine plans listing your child's medicines and writing down when and how much to take. We will review this medicine plan in your individual sessions to be sure you and your child know exactly what medicines you should be taking — and how to take them correctly."

"How many of you have a plan yet? If you don't have it yet, you will need to remind your doctor to fill it in. If you aren't sure who your doctor is, we can talk about this afterwards."

Tips for being assertive and talking with doctors

(20 minutes)

The point of this discussion is to introduce people to assertive and effective communication skills so that the Asthma Counselor can begin to help the client negotiate through the health care system. Say something like this:

"Now let's talk about communicating effectively with doctors in a way that asserts your rights, but doesn't damage the relationship you are trying to build with your doctor. The reason it is important to have a good relationship with the doctor is that medicines are a key tool in controlling asthma As your doctor gets to know you and your child, he/she will be able to adjust medicines over time.

Let's start with a few tips for talking with doctors."

Put up your handwritten list "Tips for talking with doctors" (or use an overhead) and review:

✔ **Use "I" when making statements about how someone makes you feel, what you want or what is on your mind. Don't accuse others with "You said ..." or "You think."**

✔ **For example, say: "But I understood you to say that I should do this and that" .... instead of: "But you said I should do this and that..."**

✔ **Say: "I feel belittled – or it makes me feel like I am stupid – when we talk this way..." instead of: "You said that in a condescending way" or "You don't have to put me down!"**

✔ **Stay calm even when you feel yourself getting angry.**

✔ **Get to the point. Taking a list of questions with you will help.**

✔ **Ask the doctor to please tell you exactly what to do.**

✔ **If you are confused, ask the doctor to repeat the information or say it in another way. Ask the doctor to write it down or write it down yourself.**

✔ **Learn some of the words doctors use. Tell the doctor when you do not understand a word.**

Remind people that you will try to teach them key words that doctors use throughout the year.

Now, begin discussing people's reactions to these tips. Ask others to share problems they have had dealing with doctors, and solutions that have worked for them in the past. If needed, ask the group to think back to some of their most frustrating experiences in clinics, emergency rooms or doctor's offices.

Limit problems to asthma care for the child (other conditions can be addressed in individual sessions). Be familiar with how care is delivered in specific care settings and anticipate the types of problems caretakers are likely to experience.

Problem Solving Skills

If people say that the problem is too difficult to solve, reinforce the fact that everyone has problems, and that while problem solving is difficult, you can work together to develop better problem-solving skills and strategies.

When caretakers voice concern over confronting the system or the doctor, introduce the concept of assertiveness. Tell them another part of problem solving is having confidence in yourself and your child's ability to take control.

When caretakers raise concerns about the "system", acknowledge that some problems cannot be fixed by a caretaker — they are problems within the system. Explain that you are there to help them when the problems become overwhelming.

Throughout the discussion and the remainder of the program, support caretaker efforts to solve problems, and bestow praise, whatever the outcome. Reinforce persistence. Be alert for success stories and use them to encourage other caretakers to do the same. Repeat success stories from other caretakers if none emerge in a particular session.

As discussion starters or reinforcement, you may use the attached case studies if time allows. At the beginning of each case study or role play, encourage people to refer to the list of tips for talking with the doctor and to try to use as many as they can.

At the end of each case study or role play ask:

- What was the problem?
- What were some of the tips from the list that were tried?
- How did they work?
- What else could have been tried?

Wrap Up

(5 minutes)

"We have covered alot today. We talked about the fact that you can learn to control asthma and your child can be symptom-free as long as you :

- figure out what starts your child's asthma attacks and do something about those things
- get a medicine plan now from your doctor and follow it
- build a partnership with a doctor, to work together to manage your child's asthma over time.

"Have confidence! You know your child best."

Before you conclude, ask the participants to:

- Sign up for next group meeting to discuss the medicine plan and difficulties with taking asthma medicines.
- Choose one thing to be worked on at home before you meet again — it could be figuring out and/or tackling some of the things that cause attacks. It could be making an appointment with the doctor to get the medicine plan or using some of the reccommended tips to begin building a better relationship with the doctor.

"Have confidence! You know your child best."

Since a few families will meet individually with you before the next group session, encourage caretakers to talk enthusiastically about the asthma program with their children. The caretaker can start talking to the child about the individual family session so that the child looks forward to the first meeting with the Asthma Counselor.

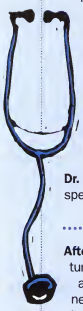
Role Play #1 — The Foreign Doctor

Doctor is: Male, with thick, foreign accent.

Caretaker is: Direct, confrontational, wants to tell doctor what to do. Wants to change medicine plan because of current side effects that child is now experiencing.

Start role play here:

Mom: Hi, Dr. Hajji, Ayesha has a cold and she started wheezing yesterday. She isn't running a temperature but her ears are probably infected. You better check her ears.



Dr. Hajji: Let me listen to her chest. Oh, her wheezing has almost completely subsided. There's no need to check her ears. See the nurse to give your prescription. Good-bye.

Mom: But, Dr. Hajji, her ears....

Dr. Hajji: I am a very busy doctor. I can't spend all day with you. Now, good-bye.

After the role play, point out that other cultures may not be used to people who are assertive and direct. While these are not necessarily bad traits, many cultures simply do not appreciate the direct approach.

Explain that this problem can usually be avoided by making suggestions in a non-threatening, more general way. For example: "Do you think it might be ...? What else could cause her to wheeze this time of the year? "

If that still doesn't work, then you will need to use your assertiveness skills.

Role Play #2 — The Rushed Doctor

Doctor is: Very young woman, nice, chatty, rushed, never lets you talk.

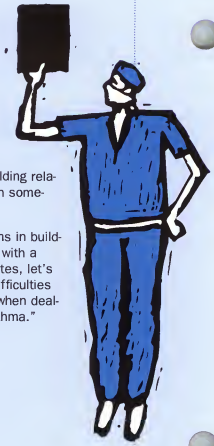
Caretaker is: Quiet, flustered, doesn't have any questions, can't think fast enough and didn't write any questions down.

Start role play here:

Doctor leaves quickly as she hands instructions to patient, chatting all the while.

After the role play, point out that all doctors have different styles, and just because they may annoy you does not mean they aren't good doctors.

Instruct caretakers to be prepared. Have a list of questions ready. Speak up. Ask the doctor to clear up any confusion or questions you have about your child's asthma early on in your visit to avoid wasting precious time.



Begin a discussion on building relationships with doctors with something like this:

"Anyone can have problems in building a working relationship with a doctor. For about 10 minutes, let's hear about some of the difficulties you have all experienced when dealing with doctors about asthma."

Role Play #3 — The Family Doctor

Doctor is: Older doctor, very patient, but not up to date on the latest developments in asthma care.

Caretaker is: Very interested in new asthma management techniques, medicines etc.; she wants her child to play basketball with the other kids, and needs a written medicine plan.

Start role play here:

Doctor: Hello there, Mrs. Harper. Robert is growing up so fast. He is just fine. I've got his prescriptions here for you.

Mrs. Harper: I wanted to ask you about writing down a medicine plan for Robert so he can play sports. His younger cousin has been taking medicine every day and is using an inhaler just before games, and it keeps him from having an attack.

Doctor: Well now, I don't know what you mean about taking this inhaler before playing sports. You just have to accept it — asthmatics can't play sports. Now you know I'm right. I've been taking care of your family for generations. I remember when you were a baby and I've never steered you wrong have I?

Mrs. Harper: You've always been so helpful. I just wonder how star athletes like Dominique Wilkens, the famous all-star basketball player with asthma, do so well. He has asthma and you never see him have an attack during a game.

Doctor: Is that so? You say that Wilkens fellow has asthma?

Mrs. Harper: Yes, he does.

Doctor: Well, you may have something there. I'll call one of the other doctors who has been out of medical school just a few years. He might know about some of this new stuff. I'll call you tomorrow. Can you give your pharmacy name to the nurse in case I need to call in an inhaler prescription?

Mrs. Harper: Sure thing. Thanks so much—but for now I really need this medicine plan filled in. You know I am part of this Asthma project at the Hospital and I need it for the program. I need to start helping Robert learn about his medicine and we need it written down.

Doctor: OK. (He writes it down).

Mrs. Harper: Thanks.

After the Role Play: The key point of this role play is to demonstrate constructive assertiveness — speaking up even when the doctor appears to disagree.

Adult Group Session 2

Asthma Medicines

Goals

Caretakers will be able to:

1. *Explain the difference between preventive and rescue medicines.*
2. *State two benefits to working with doctor over time.*
3. *State two danger signs for overuse of "rescue" medicines.*
4. *Explain the difference between clues and triggers.*
5. *State the three things caretaker should do if an attack starts.*
6. *State three danger signs that an attack is worsening and requires medical attention.*

Materials

- Sample medicine plan
- placebo inhalers
- medicine plans
- "Questions for my doctor"
- spacers
- flipcharts
- Family books
- peak flow meters

Schedule

- **Welcome/Review from Session 1** *(10 minutes)*
- **Group Introductions** *(10 minutes)*
- **Figure Out the Child's Asthma Clues** *(5 minutes)*
- **Act Quickly When an Asthma Attack Starts** *(5 minutes)*
- **How to Tell if the Child is Better or Worse** *(5 minutes)*
- **What Asthma Medicines Do in the Lungs** *(5 minutes)*
- **Rescue Medicines versus Preventive Medicines** *(5 minutes)*
- **Medicines and Sports** *(5 minutes)*
- **Tips for Sticking to the Medicine Plan** *(35 minutes)*
- **Wrap-Up and Summary** *(5 minutes)*

Welcome/Review of Session 1

(10 minutes)

As you greet/check off each individual, give her/him a name tag and packet of materials for the day.

Encourage people to mingle, get refreshments and examine the "samples" of medicine and "equipment" (inhalers, spacers, nebulizer, peak flow meters) prior to starting.

Introduce yourself as the Asthma Counselor. For the benefits of those who missed Session 1, remind people that you are not a doctor and cannot advise or prescribe medicines, but you can help them find ways to stick to their medicine plan.

Briefly restate the goals of the program as in Session 1 with something like this:

"You already know a lot about asthma and you know your child better than anyone else. The purpose of this program is to help you develop the skills you need to help your child so that your child has fewer problems — and no symptoms from asthma. That means things like your child being able to run, play and go to school like other children. It means that you and your child should be able to sleep all night. Expect nothing less than this. If these things are not happening, asthma is not under control.

"Why do we think your child can be free of asthma symptoms? Because although asthma hasn't changed that much over the years, many doctors understand it better now and the medicines are much better. There have been lots of discoveries in the last few years about asthma medicines. Some doctors know a lot about these; others are just learning.

"To keep your child symptom free there are three things you need to do:"

1. **Figure out what starts your child's asthma attacks and take action.**
2. **Get a written medicine plan now from the doctor and follow it.**
3. **Develop a partnership with your child's doctor so that he/she will follow your child over time.**

"Together we are going to work on learning more, building your confidence to help you to do these things. In Session 1, we talked a lot about myths and rumors about asthma. We talked about things that start asthma attacks and things you can do at home to prevent attacks. We also started talking about ways to build that relationship with your doctor.

Go into a very quick review of the first session. You might want to use visual aids from Session 1 to jog memories or get the group to recount what they remember. In your review, highlight the behaviors you want people to remember — not just the information (i.e. restating what to do about smoking, pets and dust in the bedroom is more important than restating the entire list triggers; restating the tips for talking with doctors is more important than vaguely instructing them to "build a relationship".)

"Today is the second — and last — group session for the adults. We will talk about asthma medicines and overcoming common problems that people face trying to stick to medicine plans. We will also tell you what you can do if an asthma attack starts.

"In the individual family sessions we will go over the particular problems that your family faces and work together with you and your child to solve those problems."

Group Introductions

(10 minutes)

Ask everyone for their first name, the name and age of the child with asthma, how long the child has had asthma and whether they attended the first session.

Learning Your Child's Asthma Clues

(5 minutes)

The point of this section is to introduce the concept of asthma "clues" and what caretakers must do when they notice clues. You will be reviewing this again in the family counseling session to be sure each caretaker and child really does know what to do and is working on recognizing the child's clues.

During the discussion, stay alert: people often confuse things that start asthma attacks with signs that an asthma attack has started, i.e. they confuse triggers and clues. One example that often confuses people is that "colds" are a trigger, but many of the clues are cold-like symptoms.

Make the following points with something like the following text. If helpful, use the flipchart.

"When asthma is under control, your child should not be having attacks or even symptoms. But sometimes it does still happen. If you act quickly at the first sign of an attack, it will be easier to stop. The longer you wait, the harder it is to stop the attack yourself and the more likely you will end up in the emergency room."

"So let's talk about what to do when an asthma attack starts so that you will know what to do, you can teach your child and you can teach others who may be responsible for your child when you are not there.

"Let's start by talking about some of the things that let you know an attack is just starting. What clues have you noticed in your children that let you know an attack is about to start? Great — here are a few more things from this list that other caretakers have noticed.

"One thing that can help you know when your child is not breathing at his or her best, is a peak flow meter. It can let you know there are problems even before your child has signs like coughing or wheezing.

"Some attacks come on quickly— in 30 to 60 minutes, but most children show signs for days before they have an attack.

(Optional: you can give an example presented from the group or use this one:)

"A child may feel tired for a day or so, the child's voice may sound a little different, then the eyes might water or the chin feel itchy. Then he coughs a little—then more and more, his chest feels tighter and tighter and then he is really wheezing."

"Remember — every child is different. Caretakers and children will quickly improve at recognizing their own personal "clues" or signs. We will work on this individually in our family sessions."

What to Do When an Asthma Attack Starts

(10 minutes)

Using a flipchart may be helpful. The following scripted section may be helpful in getting through this short didactic section.

"In the family counseling session, we will teach your child these three steps for handling an attack. The order in which they do these things depends on the situation (school, playground, home) and whether they have their medicine with them or need to send someone to get the medicine.

A child should be taught to:

- Take asthma "rescue" medicine right away.
- Relax. Sit down somewhere away from the thing(s) that started the attack!
- Breathe slowly to help relax.
- Tell a grown-up or ask a friend to tell a grown-up

"Teach yourself and other adults to do these three things:"

1. **Give "rescue" medicine right away. Notice what time it is.**
2. **Everyone should relax (the child and the adult).**
3. **Watch your child for about an hour, in a place away from the thing that started the attack. You don't have to hover–just keep checking.**

Use the Family Book (page 9) or the flip chart to review the following things that tell you the child is better and can return to normal activities when he/she feels ready:

- Peak flow number is higher
- Breathing is slower and easier
- Child can sit or lie down without trouble breathing
- Child can speak without gasping for air
- Spaces between ribs do not sink in when child breathes in
- Face, lips and fingernails have normal color again

Use the Family Book or the flipchart to review the following things that tell you the child is worse and you need to talk with a doctor right away:

- Peak flow number does not get higher.
- Breathing is hard, noisy, and fast.
- The nose opens wide when your child breathes.
- Spaces sink in between the ribs or around the collar bones when your child breathes in
- Child has trouble walking or talking
- Face, lips or fingernails turn gray or blue

When you call, tell the doctor which medicines you have tried and at what time you tried them.

If you have to go to the emergency room, again, be sure you can tell the emergency room doctors what medicines you have tried and when you tried them.

Bring the medicine plan and/or the medicines with you if you think you will have trouble remembering the names of the medicines.

Remind people that you will review the signs that mean your child is not getting better during the family counseling session.

What Asthma Medicines Do in the Lungs

(5 minutes)

The flipchart may be helpful. Say something like this:

"Now that we know what an attack looks like from the outside — let's talk about what it is like on the inside of the body. In the lungs, the airways get smaller and smaller —like branches of a tree. At the end of each airway are tiny sacks of air like tiny balloons."

(Note: Please resist the temptation to go into long descriptions of anatomy. Keep it simple as per the following suggested script.)

"During an asthma attack, three things happen:"

1. **The airways get squeezed a little.**
2. **The sides swell up. Doctors say there is "inflammation" in the airways.**
3. **The insides of the airways make too much mucus.**

"These things make it hard for the air to get in when a child breathes in — or inhales. They also makes it hard for "old" air to get out when a child breathes out — or exhales. That's why sometimes the chest feels and looks full and tight during an asthma attack and why the nostrils flare out when the child breathes out."

Rescue Medicines vs. Preventive Medicines

(10 minutes)

This section describes how asthma medicines help the lungs. Begin by explaining that when a child has asthma, asthma attacks come and go but the lungs stay sensitive and are easily bothered. Even when a child is not having an asthma attack, the airways can still be swollen, inhibiting the child's breathing. Because asthma is with children all the time, many take preventive medicine each day.

Explain that a preventive medicine keeps asthma attacks from starting.

"Preventive medicine works slowly over many weeks to stop the swelling or inflammation in the airways. It is taken every day, even when the person with asthma feels fine and can breathe well. Many people take their preventive medicine all year long for many years. People can not become addicted or hooked on these asthma medicines even if you use them for many years.

It is too much if the child uses rescue medicine every day or more than four times in one day to stop asthma attacks.

"You may hear doctors use the word "anti-inflammatory" medicines. They are talking about preventive medicine for asthma. "Anti" means "against" and "inflammatory" means inflammation or swelling. So these medicines are "against inflammation" in the airways. Intal — also called cromolyn — is an anti-inflammatory preventive medicine. So are inhaled steroids."

Continue with a discussion of rescue medicines.

"A rescue medicine helps stop an asthma attack that has already started or keep an attack from getting serious. It works quickly to stop the squeezing and open the airways in the lungs during an attack, and is taken at the first sign of a wheeze, cough or tight chest. Sometimes doctors instruct people to take it every day for a week or two following an attack, but rescue medicines are not meant to be used to stop attacks every day for weeks and weeks.

"Doctors may use the word "Broncho-dilator". "Broncho" is short for "bronchial tubes" — another name for airways — and "dilator" means "opens up". So a bronchodilator "opens up the airways". There are many types of bronchodilators. They are some of the main rescue medicines for asthma."

Emphasize that there is a real danger in overusing rescue medicines. Many people do!

Note: It is too much if the child uses rescue medicine every day or more than four times in one day to stop asthma attacks.

Explain that the child's rescue medicine may make him/her feel better for a little while, but they shouldn't be fooled into thinking the child is getting better. In fact, the airways in the lungs are becoming more swollen, and the child is in danger of having a very bad asthma attack. Advise them to ask the doctor for a preventive medicine that will stop the airway swelling and prevent an attack.

Medicine and Sports

(5 minutes)

The point of this section is to let people know that:

- Sports are a major concern that children have about their asthma.
- Many caretakers have probably already faced this dilemma with their child.
- Using medicines before sports to prevent attacks is new to many doctors so they may need to keep asking about it.
- Children need encouragement and once they are taking preventive medicines, they should be able to play any sport.

You should mention:

Sports and playing are a main concern of most children with asthma. So get that medicine plan from your doctor and be sure to talk about the medicines to take before hand.

"There is one special use of asthma medicine that doctors have discovered — it is using certain medicines before running or playing hard so that an asthma attack does not start. Ask your doctor about this. This is one area where doctors have learned a lot over the past few years. It can be a little confusing though because sometimes the same medicine is used as a preventive medicine just before sports — and then used as a rescue medicine when your child has an asthma attack.

Emphasize that most children can play any sport they want if they are taking the right preventive medicines.

"Sports and playing are a main concern of most children with asthma. So get that medicine plan from your doctor and be sure to talk about the medicines to take before hand. Once you have a medicine plan from your doctor, build your child's confidence and encourage him/her to try new things. Do not hold your child back. Let your child decide what to play."

Working with the Doctor on Medicine Plans

(5 minutes)

The point of this section is to build caretaker confidence in their ability to learn more about their child's asthma medicines over time and to motivate them to learn more.

Say something like this:

"Every child is different and so are every child's medicines. Getting a good medicine plan and following it will help to prevent asthma attacks and help 'rescue' your child quickly when an attack starts. So all this gets back to why you need to work with your doctor and get a medicine plan for your child.

"Taking medicines the right way means following the medicine plan and taking the right medicine, at the right time, in the right amount, in the right way. We will work on these things with you and your child in the individual session and make sure your child can use the spacer that we will provide."

Encourage caretakers to learn the specific names of the medicines their child takes — they can write them down or keep a copy of the medicine plan with them for emergencies. Put up a list of questions to ask your doctor, taken from page 27 of the Family Book. Tell people that you will not be going over specific medicine information in the group, that you are not a doctor, but you will help them to try to learn as much as they can about the medicines their child is taking. Encourage caretakers to get the doctor to highlight the name of the medicine, or write the names of the medicine on the page that describes it in their books.

Tips for Sticking to the Medicine Plan

(35 minutes)

The point of the remainder of the session is to give caretakers permission to admit that they have problems getting their child to take asthma medicines exactly as the doctor has prescribed. Assure them that it is permissible to talk about these problems. Sometimes the problems come from the children, sometimes from adults, and sometimes — both. If they can't solve the problem on their own, there are others who can help. If the problems continue, they must talk with the doctor.

To get the discussion moving, try something like this:

"Everyone has trouble getting their child to take his or her asthma medicines just as the doctor prescribed. What is different for each family are the **reasons** *that they have trouble. Today we are going to talk about all the different reasons people have trouble — and sharing some ways to overcome these problems. When we meet individually during the year, we will work on the issues that are most important for you child. You have all had a lot of experience with this — so let's start by just naming some of the reasons.*

*Special Note to Counselors: This discussion is where experienced group members have much to offer. Remember, however, that you have a major responsibility to correct any misinformation raised. Experienced people can be very influential even when their information is incorrect.

You may not get to all of the following issues. Try to guide the discussion so that most topics are covered. It may be appropriate to discuss:

Problems Running Out of Medicine

Caretakers should:

- Ask the doctor how many refills come with a prescription.
- Ask the doctor about how much the medicine will cost and how long it will last.
- Set aside money for prescriptions and taxi fare.
- Get the prescription filled as soon as possible.
- Go to the same pharmacy so you can return there for refills.
- Schedule the next appointment in advance so you can get the next prescription before you run out of medicine. Know how long a wait it will be from the day you call until the actual appointment.
- Invent ways to keep track of how much medicine is left.

Problems Sticking to Schedules and Taking Medicine at the Correct Time

Caretakers should:

- Talk to doctor about adjusting schedule so it matches mealtimes or won't need to be taken during school.
- Talk to doctor about medicines that are longer acting — that don't need to be taken as frequently each day.
- Talk to doctor about which medicines must be taken exactly on schedule and which medicines (like perhaps Intal) offer more flexibility.
- Plan ahead and bring medicines along in case plans change.
- Get child involved — ask for child's ideas.
- Leave reminder notes for child or self.
- Post schedules on fridge/other easily seen places.
- Make reminder phone calls to child from work.
- Give rewards like stickers on a chart for kids.
- Mark a calendar to remember appointments and medicine schedule.

Offer advice on what to do when the child gets off schedule. Although it is preferable to take medicine at the correct time, if they forget, they should not take double doses. It is best to call doctor if they have completely veered off schedule so that a new routine can be established.

Concerns About Side Effects

Side effects should not be a major problem for the child. If they are, the medicine may require adjustment. The doctor may need to work with the family to get it absoloutely correct. The child needs enough medicine to control asthma symptoms without experiencing side effects. Also as children grow, dosage will change — that's why it's important to continue seeing the doctor over time.

Learn more about the child's medicine and the difference between common, but harmeless side effects, and uncommon, but dangerous side effects. Refer people to medicine fact sheets in the medicine chapter in their books.

Clarify that steroids for asthma are **not** the same steroids athletes take.

"The inhaled steroids have almost no side effects and doctors are recommending them more frequently. while steroids that are swallowed — like prednisone — are offered less frequently. When people are on oral steroids for a long time, there can be many side effects. For this reason many doctors do not put children on oral steroids for more than 10 to 14 days at a time."

(Note: Talk to the doctor if the child is put on oral steroids for more than 10 days.)

Tips for Handling Side Effects at Home

- Reducing caffeine (chocolate, Coke) if child appears hyperactive.
- Giving medicine with meals if child's stomach is upset.
- Rinsing mouth with water after using inhaled medicines to stop coughing and reduce throat irritation.

Concerns About Addiction

A child cannot become addicted to preventive medicines even if he/she takes them everyday for years. However, there is concern about overuse of rescue medicines. People need to treat the inflammation and prevent attacks — not just treat attacks.

Tips for Children Who Refuse to Take Medicine or Have Trouble Using Inhalers

Ask the doctor about using a spacer and a nebulizer to help take charge of the asthma at home. (For tips on taking "nasty tasting" medicine, see Kids Book, page 29 for ideas like: putting it in applesauce, holding nose when swallowing, rinsing mouth or chewing sugarless gum after using the nebulizer if breath "stinks", etc.) Encourage caretakers to exchange information on which medicines taste best.

Problems When Child is Not Being "Responsible"

There are tips for gradually giving children more responsibility in the Family Book (page 28). Stress that all children need to learn these eventually, since they will probably have asthma for many more years.

"Encourage them to remember to take the medicine on time, getting it, measuring it, taking it correctly, putting it back, and keeping track of when it's time to get more. Have children watch you do it, then watch them as they do it, and finally, let them do it alone and tell you about it later."

Problems When Others Must Give Your Child Medicine

- Provide letters which explain the medicine plans for school, coaches, daycare workers, scout leaders, family members, siblings, caretakers of friends.
- Lend the Asthma Book.
- Teach your child what to do.

Taking Medicine Correctly

- Get people to exchange tips for remembering which medicine is which (red, green yellow stickers put on by doctor, putting medicine plan on refrigerator, keeping all asthma medicines together in a special place, like a shoebox)
- Get people to express their thoughts about only using doctor-prescribed medicines (convey dangers of relying on over-the-counter, or other people's medicines)

Wrap Up and Schedule the Individual Family Session

(5 minutes)

"Today we talked more about asthma medicines and the need to build a relationship with a doctor in order to get a medicine plan. We discussed adjusting your child's medicine over time, so you can find the right preventive medicine for your child so that asthma attacks do not start, and side effects from medicines are not a major problem.

"We talked about recognizing asthma attacks early and how to handle asthma attacks with rescue medicines.

"We talked about some of the problems we all face trying to stick to medicine plans and started sharing ideas for overcoming these problems.

"You know your child best. We will continue to work together to help you to take charge of your child's asthma so that your child does not have any asthma symptoms.

"I'm looking forward to working with you individually on those three important tasks:

- *Figuring out what starts your child's asthma attacks and what to do about those things*
- *Getting a written medicine plan from the doctor now and sticking to it*
- *Developing a partnership with your child's doctor over time"*

Before the participants leave for the day, ask them to sign up for the individual family session where you will meet together with the child to talk about triggers and sticking to the medicine plan. You'll talk more about preventive medicines, peak flow meters and spacers and what to do when an attack starts. During the session, you will start working on the particular problems the family faces when managing the child's asthma.

Finally, encourage the caretaker to talk enthusiastically about the asthma program with their kids. The caretaker can start talking to the child about the individual family session so that the child feels good about the project before the first encounter with the Asthma Counselor.

Children's Group Session 1

Taking Charge of Your Asthma

Goals

1. *Children will be able to state that they can control their asthma and lead normal lives.*
2. *Children will be able to identify where their lungs are.*
3. *Children will be able to name three of their asthma clues (signs).*
4. *Through role play children will demonstrate what to do when an asthma attack starts.*

Materials

- Child's Book or handouts
- Name tags
- Markers or crayons
- Session report form
- Flip charts
- Costumes

Schedule

- **Verify Registration and Handout Materials**
  (5 minutes)
- **Introduce Yourself and the Program**
  (5 minutes)
- **What is Asthma?**
  (5 minutes)
- **Learning Your Asthma Clues**
  (10 minutes)
- **What to Do When an Asthma Attack Starts**
  (10 minutes)
- **Asthma Medicines–Using Them the Correct Way**
  (15 minutes)
- **Asthma Actors**
  (15 minutes)
- **Wrap Up**
  (5 minutes)

Preparation

1. Draw the outline of lungs on a white Tee-shirt

2. Purchase or gather these props for role play:

- Speaking cone (any tube, toilet paper/paper towel roll with construction paper taped on)
- Lunchroom props (plastic cups, straws, plastic eating utensils, pretend trays using cardboard pieces etc.)
- Oven mitt
- Bags or backpacks (at least four)
- Cleaning materials (sponge, dust cloth, bucket, duster, etc.)

3. Purchase or make costumes for role play:

- Devil (any negative connotation: a devil mask if possible, red with horns; a long strip of red cloth for tail— just tuck into pants or skirt)
- Angel (any positive connotation; a mask with feathers, or a halo made of pipe cleaners and glitter or garland or make wings)
- Student with asthma (Use Tee-shirt with lungs drawn on it)
- Best friend (baseball cap)
- Mean kid (torn Tee-shirt, tough looking clothes, bandanna)
- Lunch monitor (glasses with chain, old-lady cardigan with chain sweater clip, "old lady" gaudy clip-on earrings)
- Mother (a woman's hat or a Tee-shirt that says "mom")
- Father (working gloves or tie or man's hat)

4. Prepare flip charts of:

- "How an asthma attack starts" (8 x 11 or 11 x 14 size)
- "What to do when an asthma attack starts"
- "How to use your inhaler the right way".

Verify Registration and Handout Materials

(5 minutes)

As the children arrive, verify their names on your list. If a child is not on the list make a note to have the caretaker sign a consent form later. Give each child a name tag, packet/booklet and pencil or crayon to write their name.

Introduce Yourself and the Program

(5 minutes)

Introduce yourself as the group leader using your first name. Tell the children they have been chosen to meet together because they are experts about wheezing, breathing problems and asthma. Tell the children you will use the word "asthma" a lot and that asthma can also mean having wheezing. They are the experts about asthma. They know a lot about having asthma and how it affects them.

The reason for these meetings is to learn how to take charge of their asthma so that they can have a life like other kids that includes running, playing and doing sports like other children. Tell them they will meet twice with the group. They will also periodically meet with you and their caretaker(s) for review.

Tell them the packets/folders are theirs to keep. It is important for them to bring it each time they come.

Tell the children how the club is like school, but not like school.

How the Club IS Like School

- Listen to what other people say.
- Respect what other people say; don't laugh at what people say unless it is a joke.
- Sometimes you must raise your hand to talk.
- No acting up.
- Stay in your chair unless playing a game.
- Get there on time; leave on time.

How the Club is NOT Like School

- Call the club leader by first name.
- Sit in a circle.
- Sometimes there is no need to raise hands to talk.
- No "wrong answers". They are the experts about how they feel.
- They help each other and the club leader.
- Surprises and prizes.

What is Asthma?

(5 minutes)

A sample introduction...

"Asthma is a problem with your breathing or your lungs. Asthma is with you all the time, but you only have problems or asthma attacks when something bothers your lungs. Lots of people have asthma. Sport stars like Dominique Wilkens (all-star basketball players), Isaiah Thomas (basketball player), Jackie Joyner Kersee (track star—many gold medals), doctors, rock stars and presidents have asthma. The key to their success was learning to control their asthma so they did not have asthma attacks. You can too. Let's talk about the lungs quickly for just a minute."

How We Breathe

Pick an average sized volunteer to model the T-shirt of the lungs. Ask the children to point to their lungs. Confirm that the lungs are in their chest under the ribs. Have the children trace their lungs on their own bodies with their fingers.

Ask children how air gets to the lungs. Confirm it goes through the mouth or nose and down a tube or "windpipe" to the lungs.

Note: It may be tempting to spend a lot of time on anatomy but you must resist or you won't get to the important behaviors at the end of the session.

How an Asthma Attack Starts

(5 minutes)

Show the children the flip chart of how an asthma attack starts. Ask them to read along with you.

"First, your breathing is fine. You get near something or do something that bothers your lungs. After awhile, your body starts to send you clues, like a cough to tell you your breathing is getting harder. But, you feel like you can keep going. If you do not take asthma medicine when you feel your clues, you will have an asthma attack. Then, you have a lot of trouble breathing, and you need help."

Put down the flip chart and ask children what was the first thing that happened? The next? etc. Verify that an asthma attack does not just come out of nowhere. The body sends clues that an attack is coming and you can discuss that next.

Learning Your Asthma Clues

(10 minutes)

Explain that an asthma attack always happens for a reason and it always sends out clues first to show that it's coming. Their job is to figure out the reasons their attacks start and figure out what their clues are so they know an attack is coming — like being a detective. They have to think really hard and sometimes write things down to figure out their clues.

Tell them they need to learn at least THREE of their clues so they can act quickly before the asthma attack gets worse.

Ask for three volunteers. Tell one child you would like him/her to be the child who develops an attack. Give him/her Tee-shirt with lungs to wear and a book or a back pack to carry. The other child will be a friend playing basketball. Give baseball cap to wear. The other child will be the neighbor's dog— give this person a tail. The Asthma counselor narrates the scenario which follows:

As I read this, I want you to act it out:

Person with asthma:
You are walking home from school feeling fine. Your neighbor's dog starts to walk with you and wants to be petted. So you stop and give the dog a good scratch. Your chin feels a little itchy. You sneeze once or twice. Then, you see your friend playing basketball.

Friend:
He/she asks you to come and play.

Person with asthma:
So, you drop your books and you start playing. As you are playing your chest starts to feel a little tight. Your tummy starts to feel a little funny. You rub your chest and tummy. You tell your friend maybe you're just hungry and a bit tired. You keep playing. You start breathing really hard. You start to wheeze. You have to sit down. You're having an asthma attack. You need help!

Ask the group what were the very first clues to let him/her know an attack was coming? (Itchy chin, sneeze). And then, what were the others? (Chest feeling tight and stomach/tummy ache).

Points to Emphasize About Clues

- Everyone is different. If they are not sure what their clues are they should think about what happened just before their last asthma attack. Talk to their family and show them the book. They can work together like detectives at home to figure out what their clues are.
- Some are early clues, some are late clues.
- Sometimes, an attack happens very quickly — 30 minutes after the first clues or signs. But usually there are signs for days before you have an attack.

OK, now that we know when an asthma attack is coming, let's talk about what we need to do when an asthma attack starts.

What to Do When an Asthma Attack Starts

(10 minutes)

Direct children to the flip chart (also in their book) "What to Do When an Asthma Attack Starts". Here's a story about a girl on a picnic — she's playing Frisbee and she starts to cough. This girl knows this is her sign to do something. Ask the children what she is supposed to do when she first feels her signs that an asthma attack is coming.

"Watch for clues that an asthma attack is coming. Act fast. Do these three things."

1. **Take your asthma medicine.**
2. **Sit down. Relax.**
3. **Tell a grown-up or ask a friend to tell a grown-up.**

Quickly point to the children and ask:

"What is one thing you do ?

Point to another child and ask:

"What is another thing"?, "What is the third thing you do?"

Ask children for ideas on how to relax quickly. Then, demonstrate relaxed, slow breathing. Ask all children to try it with you. Tell the children to lean forward with elbows on their knees and breathe slowly through the mouth. Let hands fall loosely between knees. Let fingers and shoulders relax.

Tell the children that the order in which you do the three things might change depending on where they are when they first feel clues that an asthma attack is starting. For example, in school if they don't have their medicine in their pocket they might tell their teacher first, then relax while the teacher gets their medicine. If they are at the playground and have their medicine with them, they should take their medicine right away, relax and then have a friend go tell a grown-up.

Tell Them to Just Remember

- It is usually best to take their medicine as soon as they can— that's why they should carry it with them whenever possible.
- Provide some ideas where to carry it (sock, pocket, backpack, waist pack etc.).
- Give places where they should take their medicines with them— school, library, picnics, bus, grandma's, baby-sitters, scouts, pool— anyplace and every place.

Ask What Order They Would do Things in the Following Situations

At home alone:

1. Call grown-up on phone.
2. Take medicine.
3. Relax.

At home with brother and sister:

1. Relax.
2. Ask them to bring medicine.
3. Tell a grown-up — ask brother/sister to tell neighbor or call your mom or a relative.

It is important to emphasize the specific steps they can take to help themselves during an asthma attack. Role playing may be useful by showing them what can happen when the right steps are taken. It is also important to discuss what can happen if they do not take the appropriate steps. By examining the consequences of each step, the child will have a more clear understanding of the effect of good and bad asthma management. Care should be taken to achieve the right balance between helping the children to understand the severity of an asthma attack, vs. scaring the child and discouraging them from trying sports and other physical activities.

For example, Jamal is out playing a game of basketball with his friends and starts wheezing.

Good Practice

If he has his medicine, he can take some, rest for a few minutes, and if he feels OK, can re-join the other kids.

Bad Practice

If he doesn't carry his medicine, he'll have to leave and go home and get some, missing the rest of the game.

If he ignores his wheezing, he could get much sicker and need to go to the doctor.

In this case, by doing something he doesn't really like to do (carry his medicine), Jamal is rewarded by feeling better and being able to stay and play with his friends.

Ask the children which hassle they think is bigger — carrying the medicines or leaving the game to go home or to the doctors?

Asthma Medicines — Using Them the Right Way

(15 minutes)

Since many of the children use inhalers, tell them you want to go over the correct way to use an inhaler. Show the flip chart of "How to Use Your Inhaler the Right Way." Ask for a volunteer to demonstrate as each step is read. Have each child who uses an inhaler try it using the placebo as you read the instructions.

Points to Emphasize

- You breathe in the medicine— you don't swallow.
- Using the inhaler is like using spray paint or hair spray— if you get to close when you spray it drips and runs; it doesn't work the way its supposed to work.
- A spacer helps make sure you breathe the medicine in right.

A spacer makes it easier to use the inhaler the right way. Show some spacers. Ask how many children have spacers and use them. Ask if the children have noticed any difference when using a spacer. Say there are spacers you can buy or you can use a plastic tube. All spacers do the same thing— they make it easier to use you inhaler the right way.

Demonstrate with a real spacer (such as Inspirease) and also with a plastic tube. (A paper roll can be used in a pinch, but cannot be used more than once). Tell them that the instructions for one kind of spacer are in the folder, but that there are other kinds of spacers too.

Asthma Actors

(15 minutes)

"Now that you've all learned what to do, we'll be play acting. Everyone will get to be an actor today. There will be two mini-plays. Someone will need to play the angel and the devil, but these are not for real; they are only pretend voices in the head of the child with asthma."

Remind them that many times we have voices in our own mind telling us to do different things. Since they are make-believe, they need the cone to speak with, so only one person can speak at a time. Explain that other children will play real people.

"The important thing to remember is that the point of each "play" is to make a decision. Every day you make decisions or choices. You are in a position to choose and you must decide which voice you will listen to — the devil or the angel."

Younger children will need to use the plays designed and will need to be narrated. Older children may want to use a real life situation they've experienced using the same cast of characters after going through one play.

Play # 1: Clues in the Lunchroom

(7 minutes)

Designate Roles

Angela (or Jamal, if boy needed) — student with asthma, devil, angel, friends, other students, mean kid, lunch room monitor.

Set Up the Scene and Props

Choose an area of the room to be the "lunchroom" and set up trays, eating utensils, etc.

Tell the Children the Scenario

They have just come in from recess and are standing in line getting their lunches. The lunch room monitor is directing traffic and telling kids to be quiet and stay in line. The student with asthma is experiencing small "clues" that an asthma attack is coming (itchy chin, scratchy throat, rubbing eyes, etc.). These are clues no one else would notice.

The Decision

Whether or not to ignore the early clues.

Narrate

Read through it first, then act it out. Asking actors:

"Angel—what would you say? Devil—how would you answer, or what would you say?"

The Action

Angela (student with asthma) begins to have very small clues (or signs) like an itchy chin. Other students are getting their lunches and sitting down at the lunch table not noticing Angela's early clues. The devil attempts to persuade Angela to ignore the clue. First, the devil teases her calling her a "baby", "wimp", "weakling", telling Angela not to listen to her clues. Then the devil adds other reasons for her to ignore the clue— telling her she'll miss lunch and the other children will laugh at her.

The angel attempts to get the child to act right away in order to prevent an attack reminding the child that he/she has to do the three things:

1. Take her medicine.
2. Sit down, relax.
3. Tell a grown-up.

The angel reminds Angela that these are her early clues and that it's better to get help early. She (Angela) can get lunch later, etc.

The goal here is to allow the students to fuel each other, responding back and forth. For example, when the devil says something, encourage the angel to provide a convincing answer.

Probe When the Actors Get Stuck

What have you said to yourself when you wanted to pretend things were not getting as bad as they were? What would you say if

someone said that to you? Then the student with asthma must choose whether to respond to the devil or the angel.

Final Point

Remember to act fast at the first signs of an attack. Then you can get back to what you were doing more easily and quicker than if you wait.

In our imagination, Angela has decided to ignore the early sign. Let's see what happens...

Play 2: Mean Kid in the Lunchroom

(7 minutes)

Roles

Same actors continue—student with asthma, best friend, mean kid, other students.
Scene and props: Remain the same—"lunchroom".

Read the Children the Scenario

Angela is sitting at the lunch table with other students. She has ignored her first clue. Now she is having worse signs.

The Decision

How to respond to the mean kid's mocking and how to ask for help from friends and the lunch room monitor (a grown-up).

The Action

Angela starts to cough and then wheeze. Her friends offer to help and tell her the right things to do—go and get her medicine, they tell her not to worry about what other kids will say or missing lunch or anything etc. Mean kid and other kids start to make fun of her—"how disgusting!, get away from my lunch!, don't cough on my food!, etc. Now everyone at the table is looking at her. Angela must decide what to do—listen to the teasing or listen to her friends telling her the right things to do.

Final Point

No matter where you are, act fast and do the 3 things.

Play 3: Going to Grandma's

(7 minutes)

Designate Roles

Mother, father, siblings, child with asthma, angel, devil.

Set Up Scene and Props

A house with bags/suitcases around, being packed to go on a trip. A kitchen can be designated and some lunchroom props used to furnish it.

Read the Children the Scenario

A family is preparing to go on an all-day visit to their grandmother's. It is a beautiful day outside and grandma cannot be outside because she is sick and needs to stay indoors.

The Decision

Whether or not to fake an asthma attack in order to get out of going to Grandma's.

The Action

Vanessa is faking asthma clues. Her brother and sister argue about whether the attack is real. Mother is frosting the cake to bring to Grandma's; Dad is loading the car. As Vanessa begins to show signs an attack is coming, her brother says, "Mom, Vanessa is faking an attack to get out of going to grandma's."

Sister responds "No, mom, she is really sick. I think she needs her inhaler, etc." Mother rushes to the other room, father does the same. Mother says, "We have to do the three things". Father says, "No she's not really having an attack— don't give her any medicine or she'll get too much medicine and then she'll really feel sick".

The devil and angel are acting accordingly. The devil tells bad advice about the "best" way to behave. " Go ahead, fake it....look how beautiful it is outside....don't you want to go play?"

The angel tells Vanessa, "You shouldn't lie...you'll have to take extra medicine that you do not need and that might make you sick....you shouldn't make your family worry about you like that when you are not telling the truth," etc.

Final Points

It may be tempting to fake an attack, but don't! (It's like the boy who cried wolf). This is serious business. You don't want to make you family worry for no reason. Asthma effects everyone in the family. If you don't want to go to Grandma's talk to your family about it.

Wrap up

(5 minutes)

Tell the children they did a wonderful job acting, what great ideas they came up with and how proud of them you are. Give each child crayons, a pencil, small toy, or other prize. Tell them that you hope they stop, look and listen to their bodies and learn the early clues.

Tell The Children You Hope They Can Make Good Decisions About:

- ✔ **Acting fast at the first sign of clues.**
- ✔ **Knowing how to talk to friends and grown-ups when they have an attack.**
- ✔ **Never faking an attack.**

Tell them you will meet again in a few weeks. Now that they know what to do when an asthma attack starts, they will spend next time talking about how to keep attacks from starting in the first place.

Children's Group Session 2

How to Keep Asthma Attacks From Starting

Goals

1. *Children will be able to state three things that start their asthma attacks.*
2. *Children will be able to state two things they can do for each trigger.*
3. *Children will demonstrate through role play what they can do in the bedroom to prevent asthma attacks.*
4. *Children will demonstrate how to talk to adult family members about the things that the family can do to keep asthma attacks from starting.*
5. *Children will demonstrate how to talk to doctors and ask about taking preventive medicine.*

Schedule

- **Verify Registration and Handout Materials** *(5 minutes)*
- **Review of Session 1** *(10 minutes)*
- **Roxy to the Rescue Video** *(20 minutes—optional)*
- **The Story of Tamika: Introduction to Prevention** *(10 minutes)*
- **What to Do About Things that Start Asthma Attacks: Replay Tamika's Story** *(10 minutes)*
- **Written Materials to Reinforce Story** *(10 minutes)*
- **The Matching Game** *(15 minutes)*
- **Asthma Actors: Brothers, Sisters and Chores** *(optional)*
- **Wrap-Up** *(5 minutes)*

Preparation

1. Draw the outline of lungs on a white Tee-shirt.

2. Purchase or gather these props for role play:

- Speaking cone: any tube, toilet paper/paper towel roll
- Mother: a woman's hat or a Tee-shirt that says "mom".
- Father: working gloves or tie or man's hat

3. Cut the 15 squares and tape or glue them to index cards for use in "The Matching Game".

4. Practice reading Tamika story.

5. Collect supplies for Tamika's story:

- "wheezy" sounding noisemaker
- magic wand (or other prop with glittery star and moon)
- "dust balls" — these can be tassels, mini pompons, or even cotton balls
- pinwheel (representing cold air)
- cut out a picture of "the bus stop smoker"
- tiny ball (basketball)
- dog (puppet or stuffed animal or clay)
- cat (puppet stuffed animal or clay)
- make a little spider web for under/next to the bed)
- puppets or dolls (purchase or borrow — or make from paper, clay/playdough, or cloth) for "Tamika"

3. Make a "doll house" bedroom (messy) using cardboard and scrap material (or use actual doll furniture) including:

- a bed with "mattress" (piece of foam)
- mattress cover (ziplock bag)
- "sheets" (piece of sheer fabric)
- fuzzy blanket (thick wool fabric)
- bedspread or light blanket
- pillow
- zippered dust-proof cover (ziplock bag)
- pillow case
- large rug
- stuffed chair
- bean-bag chair or straight chair
- small throw rug
- lots of miniature toys (real or cutout pictures)
- lots of stuffed animals (real or cut out fabric)
- kids clothes (doll clothes or cut out fabric)
- little boxes
- dog (tiny stuffed one)
- make walls by fitting three pieces of cardboard — put window on one, make frame that can open and close.
- make a miniature air-conditioner that would fit in window (draw on a small box)
- humidifier
- heavy curtains stuck on with Velcro
- actual sample mattress cover and pillow cover

7. Prepare "trigger poster" for Tamika's story (tape blown-up version of triggers to newsprint and tape to wall).

8. Organize video equipment to play "Roxy to the Rescue" (optional).

Verify Registration and Handout Materials

(5 minutes)

As the children arrive, have the assistant verify names on your list. If a child is not on the list make a note of it and have caretaker sign a consent later. Give each child a name tag, packet/booklet and pencil or crayon to write their name.

Review of Session 1

(5 minutes)

"Last time we talked about what to do when as asthma attack starts. What is the first thing you do? What is the second thing you do? What is the third thing you do?"

Tell them how great it is that they remembered. Ask the children, "How do they know when an asthma attack is coming? What are some their clues (or signs) that an attack is coming?"

Ask the children what decisions they made about their asthma. Did anyone listen to the clues their bodies sent them? Did anyone find out about early clues that they didn't notice before?

Tell the children that they now know what to do when they have an asthma attack, you' re going to spend the time today talking about how to keep their attacks from even starting. Some people say this is "preventing an asthma attack".

"Roxy to the Rescue" Video

(20 minutes)

Have the children sit in a comfortable place where they have a good view of the video monitor. Explain that the video, which is about 20 minutes long, is a story about Roxy, and how she helps her cousin learn to take better care of his asthma. (Optional: Copies are available for viewing at home with families and caretakers.)

The Story of Tamika: Introduction to Prevention

(10 minutes)

Put up the poster of the "Things that start your asthma attacks" at a level that children can reach. Get out your Tamika puppet or doll and your noise maker and be sure everyone can see the "messy bedroom." Give the following parts to children to help you: cold air (pinwheel), "night" (magic wand), cat, dog, dust (cotton balls or tassels), running (finger nails tapping on table top), sports (ball to bounce).

Tell them now you are going to talk about the ways you can keep asthma attacks from starting. You are going to talk about things that start your asthma attacks, and that some doctors call these things "triggers".

I'm going to read you a story about a young girl named Tamika...

Tamika had asthma, which meant that she had a hard time breathing sometimes. She always kept her room very clean, because this made it easier for her to breathe. Well, it was (Thanksgiving/Christmas) and her sister just came home from college for winter vacation. She was living in Tamika's room with her and she was a slob! She

threw all of her clothes and sports stuff on the floor and she never made her bed. She even messed up Tamika's bed sometimes. She would drag dirt and dust into the room and never clean it up. She did her art projects in the room with all kinds of stinky glues and spray paints. She ate in her room and left food that brought cockroaches. She even brought her cat Mittens home with her and Mittens always slept on the bed.

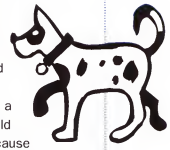
One day Tamika got home from school and was very, very tired. She was too tired to clean up her room. So she did all her homework and went right to bed. During the night, Mittens jumped up on her bed and curled up right next to her face. Now, Tamika loved animals, so she didn't want to kick him off the bed, but she knew it was hard for her to breathe near Mittens. She was so tired, she just fell right back to sleep. But later in the night, she woke up and was having a very hard time breathing. So she got up and took her inhaler. She stood by the window and looked out by the night stars thinking how sad she was to have asthma. Sometimes it was so hard for her to breathe and she always felt scared to wake anybody in her family up to tell them. Tamika took one more puff of her inhaler and got back into her bed and fell asleep.

The next morning Tamika woke up late because she hadn't slept very well the night before. Because she was hurrying, she forgot to take her regular morning medicine. She ran all around her dusty room looking everywhere for her homework — she looked under her sister's things and found disgusting old pizza with roaches on it! Her sister had accidentally pushed her homework under the bed because she needed room for her art project.

She poked her head under the bed and saw her papers all crumpled between her sister's running shoes and an old, dirty sock and then she reached under the dusty bed between all of the dust balls and pulled it out.

Then she ran into the kitchen to make her lunch for school that day. (As story progresses make a wheezing sound gradually getting louder.)

Tamika ran outside into the cold air looking at her watch. All she could think was that she had to run to school so that she wouldn't be late because she had already been late twice that week. She had forgotten to wear her scarf. The wind was blowing and it was so cold it almost felt like it was going to snow. Tamika made it to the corner where there was a man smoking. There was a red light so she couldn't cross the street. She started to feel her lungs get very tight. Finally the light turned green and she ran across the street. Just then her neighbor, old Mr. Jones called out to her. "Tamika" he said, "my little dog Ashes, just ran into the street. Quickly, go grab him before he gets hit by a car!" So Tamika hurried over to the curb, looked both ways for cars, and ran to the dog, picking him up just as a truck was turning the corner. Old Mr. Jones was so thankful, because Ashes kept him company through all the lonely days, that he wouldn't stop hugging Tamika — and he always wore Old Spice aftershave that really bothered Tamika.



She was now even later than ever. Finally, Tamika was on her way... now she really had to run hard to get to school on time.

When she got to school, she was having a hard time breathing, but she was very excited because she made it in time and her first class was P.E. Tamika loved P.E. She was the best basketball player in her class and she loved showing off in front of the boys. Luckily, they were playing basketball in P.E. that day, so she could really show them how good she was. The only trouble was, her chest felt very tight. But she decided not to say anything because her P.E. teacher sometimes would not let her play sports because she had asthma. So she started to play. She was running down the court, when all of a sudden she fell down on the ground. She could hardly breathe.

The P.E. teacher brought her to the nurse. The nurse gave her medicine right and made her relax. She was surprised how much Tamika was still wheezing. Tamika had waited too long to get her medicine and her lungs were so bothered by so many things that her usual medicine wasn't even helping now. The school called her mother to tell her that Tamika had an asthma attack, but was still wheezing hard after taking her medicine. So her mother had to leave work to get her and take her to the doctor.

When the story is over, ask for all of the things Tamika encountered that made her wheeze. Start from the beginning of the story. Check off these things as you go along on the large poster on newsprint (or on an overhead). After the group finishes, review the story quickly to see if anything was left out.

Make a point that the "dust" we are most concerned about is the dust in beds, blankets, pillows and stuffed animals — not the dust on the road.

Naming the things that start an asthma attack is sometimes the easy part. Knowing what to do about these things and actually doing them is the hard part, but it can be done.

What to Do About the Things that Start Your Child's Asthma Attack

(15 minutes)

Hand out the pages "What to do about things that start asthma attacks". Tell the children that now we will go back and retell the same story, this time doing things differently to prevent an attack. If they need some help thinking of things that Tamika can do about each trigger, they can look at these pages. First:

"How about that messy room?"

Clean up the room and "asthma proof" or "dust proof" the bed. Have volunteers help you to put on mattress covers and take out all the things that start asthma (see "dusty room" section).

After the bedroom, let the children lead in terms of naming the things that start attacks — but try to recreate the story in the same sequence as it was first presented. Refer to the illustrated pages as needed.

Be sure to cover:

- pets at home
- roaches at home
- sprays/strong smells (paints/aftershave)
- forgetting medicine
- forgetting scarf
- running to school and in P.E. without using inhaler first (pre-treating)
- picking up a dog for someone else
- smoke at the bus stop

The Matching Game

(15 minutes)

For the matching game put the illustrated signs along a wall or on a circle or row of chairs. First tell the children what the stations are and what the "activity" is for each station.

Tell the children that when they pick a card, they have to tell everyone what they picked and then go to the matching "station" that tells then something that would help them with that problem. They must do the "action" at each station after the group agrees that is the right match.

The Stations

- Ask doctor for extra preventive medicine. *(Ask doctor — played by you. Then demonstrate inhaler technique.)*
- Talk to my family about keeping it out of our home. *(Ask mother — played by you.)*
- Relax. Calm down fast. *(Sit in chair with elbows on knees.)*
- Open the windows for an hour. *(Make believe they are opening window.)*
- Wash hair before bed. *(Pretend washing.)*
- Use a special mattress cover. *(Put doll house mattress in ziplock bag.)*
- Keep these things out of my room. *(Take it out of doll house.)*
- Move away or stay away from it when you are away from home. *(Walk to the far side of the room.)*
- Go to rooms or places with an air conditioner. *(Name two places you know with air conditioning.)*
- Cover your mouth and nose with a scarf. *(Demonstrate with scarf.)*

Put the following cards in a hat for picking. A number will be on the reverse side of each card — the number shows the number of different things that will help them.

The Cards

smoke (3)
Keep it out of room, move away when not home, talk to my family

dust (2)
Talk to family, talk about mattress cover

pets (3)
Out of bedroom, talk to family; move away

cold air (1)
scarf

running, playing and sports (1)
talk to doctor

roaches (1)
talk to family

sprays and strong smells (4)
out of bedroom, talk to family, open windows, move away

pollen (3)
places with air conditioning, wash hair, talk to doctor

laughing, yelling or crying hard (1)
calm down fast

colds (1)
talk to doctor about taking extra preventive medicine

stuffed animals (1)
keep it out of bedroom

Asthma Actors

[Optional: If time allows]

Younger children can use the plays designed and will need to be narrated. Older children may want to use a real life situation they've experienced using the same cast of characters after going through one play.

Play 1: Bothers, Sisters and Chores

(7 minutes)

Designate Roles

Mother, child with asthma, siblings, devil, angel.

Set up Scene and Props

House with cleaning supplies out (sponge, dust cloth, duster, etc.).

Tell the Children the Scenario

It is time to do chores and the children are left to decide how to distribute the work.

The Decision

The child with asthma must decide whether to get out of doing chores because of asthma or come up with a fair solution to who will do which chores.

The Action

Child with asthma argues that he/she is unable to participate in chores for health reasons, other children get angry, an argument begins. Someone comes up with the idea that there are some chores that a person with asthma can do (folding laundry, doing the dishes, etc.). The devil attempts to convince the child to retain an argumentative stance while the angel tries to encourage a resolution. The mother is consulted throughout the process, but encourages the kids to work it out themselves.

Wrap Up

(5 minutes)

Tell the children they did a wonderful job acting, what great ideas they came up with and that you are very proud of them. Give each child a pencil or other prize. Tell them you hope they can make good decisions when they need to make choices. Tell them you will meet again in a few weeks. Now that they know what to do when an asthma attack starts, they will spend the next session talking about how to keep attacks from starting in the first place.

Individual Family Session

The Medicine Plan

Goals

The caretaker will be able to:

1. *Explain the difference between preventive and rescue medicines.*
2. *Explain the green, yellow, red zones on a medicine plan.*
3. *Tell the times, amounts and means for giving each medicine.*
4. *Demonstrate how they keep track of which medicines have been given each day (at school/daycare/home/ on overnight stays).*
5. *Explain a means of monitoring independent use of medicines by child (if appropriate).*
6. *State two danger signs for overuse of "rescue" medicines.*
7. *State the three things caretaker should do if attack starts*
8. *State three danger signs that an attack is getting worse and medicine is not helping*
9. *State three progressively more mild (i.e. earlier and earlier) signs that an asthma attack is starting.*

A child ages 9 to 11 will be able to:

1. *Explain the difference between preventive and rescue medicines.*
2. *Explain the green, yellow, red zones on a medicine plan.*
3. *Show the counselor which of his/her medicines are preventive and which are rescue (or green zone versus yellow and red zone).*
4. *State two danger signs for overuse of "rescue" medicines.*
5. *Demonstrate correct use of inhaler using placebo.*
6. *Demonstrate how he/she keeps track of medicine when used independently.*
7. *State the three things he/she should do if attack starts.*

A child ages 5 to 8 will be able to:

1. *Demonstrate correct use of inhaler with spacer using placebo.*
2. *State the three things he/she should do if attack starts.*

Schedule

- **Greet the Client**
  (5 minutes)
- **Assess Risk Factors**
  (20 minutes)
- **Asthma Clues**
  (5 minutes)
- **Tell What to Do When an Asthma Attack Starts**
  (5 minutes)
- **Explanation of Medicine Plan**
  (15 minutes)
- **Practice Use of Inhaled Medicines**
  (5 minutes)
- **Initiate Process of Making Referrals**
  (10 minutes—optional)
- **Wrap-Up**
  (5 minutes)

Session Notes

Materials

Handouts
- Child book
- Pencil or small gift
- Calendar for tracking medicine use
- Medicine Plan
- Magnet with logo
- "Questions for My Doctor" list

Additional materials for use by counselor
- Placebo inhalers
- Spacers
- Sample medicine plans
- Flip chart (adapted from parent book)

Background Reading
- Family Book (Chapters 1,2,3,6)

Attendance

The session will be attended by a caretaker and the child with asthma. It will be rare, but acceptable, for more than one parent/caretaker to attend. Baby-sitting should be provided if other siblings are present.

Preparation

- Confirm appointments for the day/give directions to office and tell caretaker to bring medicine plan and actual medicines.
- Pull enough books for all children scheduled for the day.
- Review background information about families.
- Arrange baby-sitting/check play area.
- Have sufficient chairs available.
- Review flip chart/set it up in office.
- Have closed box with sample spacers and PF meters ready to show during session.
- Check functioning of placebo inhalers and spacers

Organize the Session

Try using the steps in "GATHER" to organize your individual family session. This will help you focus on empowering people to make decisions about what they want to work on next.

The letters in "GATHER" stand for:

G Greet the client

A Ask about needs

T Tell about asthma issues that need work

H Help client decide which asthma issue, problem or obstacle to work on next

E Explain more about the chosen issue, problem or obstacle

R (Wrap up) and return visit (or phone call) schedule

Greet the Client

(5 minutes)

Greet the caretaker and child. Ask the child if he/she has a nickname which he/she likes to be called. Offer coffee/tea, juice. Re-introduce yourself as the Asthma Counselor. Tell them you will be working with them over the next several months to reduce some of the problems they have with asthma. Ask the caretaker for feedback on the group session or discuss why they could not attend.

Ask About Main Needs/Concerns

(20 minutes)

One of the unique aspects of the intervention is the focus on individualizing the program based the specific needs of each family. Much of the first individual session should focus on identifying the unique problems faced by the family. There are several key elements of this profile which should be ascertained by the Asthma Counselor during the first individual session. (See "caveats" section.)

Areas which should be addressed include:

- primary language of the child and adult
- child's age, grade and school
- the child's family history of asthma
- the child's "regular" physician and source of care
- medicines that the child is supposed to take, including use of a MDI, spacer, peak flow meter
- problems taking medicines, including side effects and problems at school
- insurance coverage
- environmental control in the home including mattress covers, carpeting, gas stove, mold, vacuuming.
- allergies
- problems with cock roaches, mice, rats
- household or classroom pets
- smokers in the home or at daycare
- home remedies for asthma (teas, rubs, herbs)
- multiple caregivers involved in child's asthma care
- child's feelings about having asthma, including sadness, shame, and dislike of medicines.
- mental health status of the caretaker(s)
- behavior problems in the child/siblings
- drug/alcohol problem in the home
- confidence in dealing with the health care system

Emphasize that you want to find out about their main concerns about asthma, too. Ask the child what bothers him/her the most about having asthma. Document this. Then ask the caretaker. Often the concerns are very different. Address the concerns if you can easily do so or tell them when you will be talking about those concerns in greater detail. Try to link their concern to the topic of a medicine plan. Tell people the one thing you will work on together today, is getting a medicine plan.

Discuss What to Do When an Asthma Attack Starts

(5 minutes)

Child

Remind the child to watch for clues that an asthma attack is coming, act fast, and do these three things:

1. Take rescue asthma medicine right away.
2. Sit down. Relax.
3. Tell a grown up or ask a friend to tell a grown up.

Tell the child the order that he/she may do the three things might change depending on where the child is when they first feel clues that an attack is coming.

For example, in school they might: tell the teacher first...then get their medicine...then relax. If they are on the playground with no other children around, they should: take their medicine.....relax ...go tell an adult or have a friend (if one appears)... tell an adult.

It is best to take your rescue asthma medicine as soon as an asthma attack starts— that's why it is good to carry your medicine with you.

Caretaker

Encourage the caretaker to watch for clues that an asthma attack is coming, act fast, and do these three things:

1. Give rescue medicine right away. Follow your asthma medicine plan.
2. Have the child sit down and breathe slowly. Both the caretaker and child should relax.
3. Watch your child. Call the doctor and tell him/her which medicines you have tried.

Asthma Clues

(5 minutes)

Show people the page of clues and say something like this: "Which things do you feel when an asthma attack starts?" Everyone is different. Caretakers and children can quickly get better and better at knowing their "clues" or signs so they can give medicine at the very first sign of a problem. Some attacks come on quickly— in 30- 60 minutes, but most people show signs for days before they have an attack. Then you can give an example such as: A child may feel tired for a day or so, the child's voice may sound a little different, then his eyes might water or his chin will feel itchy, then he coughs a little—then more and more his chest feels tighter and tighter and then he is really wheezing.

Tell About Medicine and Medicine Plan

(10 minutes)

Show a copy of a blank medicine plan to the caretaker. Encourage them to bring or mail it to the doctor to have him/her complete it. If the child does not have a regular doctor that he/she sees for asthma care, refer them to one within your program. If the child has not visited the physician within the past 2 months, ask the caretaker to call the office to see if another appointment is needed in order to fill out a plan.

Explain the format of the medicine plan
The following explanation may be helpful for both the child and the caretaker.

The medicine plan has green, yellow, and red zones that tell you what to do. These zones are set up like a traffic light. This medicine plan from your doctor will tell you when you need to take each medicine. Let's look at your medicines— which ones are green, yellow, and red?

· Green means go

You are breathing fine. You can do what you want. Some children use a peak flow meter to let them know when their number is in the green zone. Do you use one?

Take asthma medicine every day to keep breathing well and to keep asthma attacks from starting. This keeps the swelling from starting and getting bad. Then, the airways are not so sensitive to the things that start asthma attacks. This means you will have fewer attacks if you take it every day. It only works if you take it every day. This is

your regular asthma medicine. Some doctors call these asthma medicines "preventive medicines", because they prevent or keep asthma attacks from starting. One kind of preventive medicine you take every day at certain times.

Another kind of preventive medicine is one you take only before playing sports or running. Some people even take preventive medicines when a cold first starts or when pollen or the weather gets bad. Has your doctor ever told you about this?

Show me: Which ones? What times? How much? Which way? Do you breathe it in using a nebulizer or inhaler, or do you take it by mouth, like a syrup or pill? OK. Let's go back to the green, yellow and red zones.

· Yellow means slow down

Take a rescue medicine now. You are not breathing at your best. You need a rescue medicine now to keep your asthma attack from getting worse.

Now let's say you are not breathing at your best. How do you know? Your child has started to show asthma clues and lets you know an asthma attack is coming. That means you moved to the Yellow Zone. Rescue medicines are asthma medicines that work fast and stop asthma attacks. They open airways and relax muscles around the airways.

· Red means stop

Your child is having a bad asthma attack. Your child needs help right now! Call your doctor now. Your child has danger signs. Give your child rescue medicine. Watch your child for at least 1 hour to be sure your child is really getting better.

If you and your child are paying attention to clues, you should not get to this point.

· Danger!

Many people use their rescue medicine too much. If your child uses this medicine more than 3 or 4 times a week, your child may need another kind of medicine to take every day.

Do you use your rescue medicine every single day to stop an asthma attack?

Do you need it more than four times in one day to stop asthma attacks?

If you said "yes" to either question, then you use your rescue medicine too much. You are having too many asthma attacks. Your rescue medicine may make you feel better for a little while, but you can be fooled into thinking you are getting better. In fact, the airways in your lungs are getting more and more swollen and you are in danger of having a very bad asthma attack. Ask your doctor for a preventive medicine that will stop the swelling in the airways so that an asthma attack does not even start.

Help Client Decide Which Obstacles to Tackle First

(10 minutes)

Find out from the child and caretaker what things are most likely to prevent them or keep them from doing these things. For example, "I haven't been to the doctor yet, and besides I can't really read that well so I don't know if I should bother the doctor to write it out." Start with the obvious— if there is no medicine plan the priority needs to be getting a medicine plan. Help them to focus only on the first step— getting the plan.

Explain More About Ways to Overcome Obstacles

(10 minutes)

The caretaker may need assistance approaching the doctor. Be sure to address the following issues before the session ends:

- Has the doctor been asked to fill out the plan?
- Did office staff take the plan?
- What was requested of the doctor ?
- Was caretaker able to articulate request clearly and quickly?
- Should practice be focused on content—needing to be clear and concise?
- Or, does caretaker need to practice a calm, relaxed tone of voice?

Writing down their questions may be the best way to overcome the nervousness. A follow up phone call may be used as a last resort if all else fails.

Note: Effective use of the medicine plan involves active involvement of the caretaker. This may be particularly problematic if there are literacy or language barriers. Be sensitive to the unique issues for a non-reader/poor reader. For instance, suggest that inhalers (sprays or pumps) and liquids be color coded to reflect the various zones. Suggest that extra time be spent discussing the plan so that it is well understood, rather than relying on reading the plan in an emergency.

Practice Use of Inhaled Medicines

(5 minutes)

Begin by saying that today, doctors think that inhaled medicines are best. Most kids should use a spacer to make it easier to use the "puffer" or "inhaler". If the child has inhaled medicines, have the child demonstrate how they use it for you (using placebo as indicated). If the child does not have inhaled medicines, talk with the caretaker about obtain inhaled preventive medicines from the doctor.

Initiate Process of Making Referrals

(10 minutes–optional)

At the Asthma Counselor's discretion, the process of initiating referrals may occur during this first individual session. In some instances, greater rapport with the family may be needed before referrals can be made effectively. The Asthma Counselor should evaluate whether some referrals may need to be delayed.

Wrap-Up and Schedule Return Visit or Telephone Call

(5 minutes)

Remind them getting a good medicine plan from their doctor and following it will help to prevent asthma attacks. Acting early when an asthma attack first starts will often prevent a bad attack.

Quickly review what you expect child and caretaker to do before next visit/phone call.

Schedule a time for next visit/phone call.

Individual Maintenance Sessions

Over the course of the intervention, the Asthma Counselor determines whether previous problems have been resolved and that no new problems have developed since the previous meeting. If the caretaker has already completed a medicine plan, review it to be sure it is completely understood.

If a Completed Plan is Not Discussed

- talk with the caretaker about how the plan might be obtained.
- ask the caretaker to describe the medicine plan as he or she understands it, and use this as the basis for the following discussion.

If child is eight or older, ask him/her to explain the plan. (This allows you to see some caretaker/child interaction). Praise and correct misinformation to be sure to go over these points:

If child is under eight, ask the caretaker to explain the plan. Keep the child involved; do not talk about the child in the third person - as if he/she isn't there!

Asthma Symptoms and Health Care Utilization

The Asthma Counselor should review the questions below each time he/she meets with the caretaker. These questions will help to determine whether the childís asthma is adequately controlled or whether he/she is experiencing excessive morbidity.

Since the Last Time We Spoke, the Child Had a Problem With

- Wheeze or cough?
- Shortness of breath?
- Pain or tightness in the chest?
- Lost school time?
- Lost play or exercise time?
- Lost sleep?

Since the Last Visit, Has the Child

- Been admitted to the hospital?
- Been to the emergency room?
- Been to a doctor for an unscheduled asthma visit?

For Each of the Events Listed, Ask

- How many days/events were there?
- What happened?
- What led up to the event? (e.g. exercise, smoke, medicine problems)
- What did the child and caretaker do?
- What was the outcome?

Review of Care Plan Problems

- Is a regular MD assigned and available?
- Is transportation available?
- Is a pharmacy and all medications available?
- What medications are presently prescribed/taken?
- Is MD's regular medical care plan available?
- Are there problems with MD's regular medical care plan?
- Have any changes been made in emergency care plan?
- Are there any problems communicating with their doctor or scheduling appointments?
- Are there any insurance problems, including payment for doctor visits, medications, emergency room visits or devices?
- Have there been any changes in family members who take care of childís asthma?

Review of Adherence Problems

- Are any folk remedies being used?
- Any side effects from asthma medicines?
- Any persisting negative beliefs?
- Any problems with using spacers, etc.?
- Is the child refusing to take medicines?
- Did caretaker stop medicines because the child is feeling better?
- Are there any problems taking medicines at school?
- Review the use of spacers, MDIs.

Review of Environment Problems

- Have there been any changes in the environment?
- Are there any environment problems now?
- Are there any problems with smoking at home or school or daycare?
- Are there any problems with cockroaches?

Evaluation of Care Plans

Throughout the intervention, the Asthma Counselor will address the importance of having a written asthma medication plan and a plan for asthma at school. The process of obtaining a plan should begin during the first individual session, or if time allows, during the adult group sessions. The caretaker will be asked for the name of the physician who usually treats the child's asthma. If the child does not see a physician regularly for care, the Asthma Counselor should make a referral to a physician associated with the program.

Each caretaker will be given a blank copy of the asthma medication and a blank copy of the school letter.

Each Physician Will be Given

- introductory letter
- sample asthma medication plan
- blank asthma medication plan (triplicate)
- blank copy of the school letter
- "guidelines for asthma management"
- peak flow meter
- peak flow calculator
- medicine dose card
- physician information sheet
- spacer device

When the asthma medication plan is complete, the physician should keep one copy, give one copy to the caretaker, and return one copy to the Asthma Counselor. It may take several follow-up calls and reinforcement by the Asthma Counselor to ensure that an appointment is scheduled and completed, and to remind the physician's office to return the plan.

When the medicine plan is returned to the Asthma Counselor, he/she will forward the plan to the physician designated by the program so that it may be evaluated (in order for the form to be properly evaluated, the Asthma Counselor will provide the physician with a summary of the child's recent symptoms and health care utilization.

If the returned version of the plan does not meet the acceptability criteria, there are several options which should be explored by the Asthma Counselor and a clinician involved with the program.

- The Asthma Counselor may send a new copy of the care plans and treatment guidelines to the cihld's physician.
- A clinician designated by the program may call the child's physician to discuss modifying the plan to meet the recommended guidelines.
- Alternative strategies may be needed depending on the structure of the program and the availability of clinical expertise.

Once an acceptable plan has been obtained, throughout the program, the Asthma Counselor should review the care plan with the family and encourage them to return to the physician if problems persist. If a new physician is chosen during that time, the Asthma Counselor or caretaker should initiate the process from the beginning.

Once an acceptable plan has been obtained, throughout the program, the Asthma Counselor should review the care plan with the family and encourage them to return to the physician if problems persist.

Environmental Training

Depending upon the family's needs, the session focusing on environmental control may be held as a separate meeting or incorporated into the first individual session or a maintenance session. The major focus of this meeting will be depend on the risk factors identified during the first individual session. By using the handouts (see appendix) and other information obtained during training, the Asthma Counselor should help the family develop strategies for improving the child's physical environment.

Be sure to focus on problem solving skills...not just on the reasons why these things are bad for child's asthma.

For example, some caretakers or family members may not be willing or able to stop smoking. During this session, the Asthma Counselor may still be able to help the family develop a plan to reduce the child's exposure.

- ask family members to smoke outside
- improve the ventilation (fans, open windows)
- do not sit in the smoking section of public places
- do not allow people to smoke while child is in the car
- give the handouts to family members who smoke to help them understand the ill effects of smoking on child's asthma
- get the child involved in asking people not to smoke near him/her

The Asthma Counselor should provide the family with useful tools for eliminating pests, such as roaches, mice and rats, from the home. For those with positive skin tests to roaches, an exterminator will be provided. For others, suggestions for keeping roaches out of the home (sealing up cracks, eliminating food sources) may be useful.

The session should also include strategies for maintaining dust and mold free home. Recommendations are noted in the handouts, such as:

For Dust Mite Elimination

- washing bedding in hot water
- eliminating heavy curtains and stuffed furniture
- cleaning while the child is not home

For Mold Reduction

- do not use humidifiers
- clean with Clorox
- avoid spending time in the basement
- remove carpeting from the bathroom.

Emphasize that the child spends the largest portion of his/her day in the bedroom (or the place where he/she sleeps). By focusing on that room, the caretaker may be able to significantly improve the childís environment and have a positive impact on his/her asthma symptoms.

Second-hand Smoke

Some of the key facts about second-hand tobacco smoke and its dangers are summarized below. Use them to inform your family and friends and to work for smoke-free policies in your community.

General Facts

✔ Second-hand smoke is a cause of disease, including lung cancer, in healthy non-smokers. Each year second-hand smoke kills about 3,000 adult non-smokers from lung cancer.

✔ Second-hand smoke causes 30 times as many lung cancer deaths as all regulated air pollutants combined.

✔ Second-hand smoke causes other respiratory problems in non-smokers: coughing, phlegm, chest discomfort, reduced lung function.

✔ For many people, second-hand smoke causes other reddening, itching, and watering of the eyes. About 8 out of 10 non-smokers report they are annoyed by others' cigarette smoke.

✔ More than 4,000 chemical compounds have been identified in tobacco smoke. Of these, at least 43 are known to cause cancer in humans or animals.

✔ At high exposure levels, nicotine is a potent and potentially lethal poison. Second-hand smoke is the only source of nicotine in the air.

✔ Non-smokers exposed to cigarette smoke have significant amounts of nicotine, carbon monoxide, and other evidence of second-hand smoke in their body fluids.

- ✔ Three out of four non-smokers have lived with smokers, and nearly half (45 percent) are worried that second-hand smoke might cause them serious health problems.
- ✔ More than 90 percent of Americans favor restricting or banning smoking in public places.
- ✔ Forty-six states and the District of Columbia in some manner restrict smoking in public places. These laws range from limited prohibitions, such as no smoking on school buses, to comprehensive clean indoor air laws that limit or ban smoking in virtually all public places.
- ✔ Laws restricting smoking in public places have been implemented with few problems and at little cost to state and local government.
- ✔ Smoking policies may have multiple benefits. Besides reducing exposure to second-hand smoke, such policies may alter smoking behavior and public attitudes about tobacco use. Over time, these changes may contribute to a significant reduction in U.S. smoking rates.

Children Exposed to Smoke

- ✔ Each year, exposure to second-hand smoke causes 150,000 to 300,000 lower respiratory tract infections in U.S. infants and children younger than 18 months of age. These infections result in 7,500 to 15,000 hospitalizations yearly.
- ✔ Chronic cough, wheezing, and phlegm are more frequent in children whose caretakers smoke.
- ✔ Children exposed to second-hand smoke at home are more likely to have middle-ear disease and reduced lung function.
- ✔ Second-hand smoke increase the number of asthma attacks and the severity of asthma in about 20% of this country's 2 million to 5 million asthmatic children.Each year, U.S. mothers who smoke at least 10 cigarettes per day can actually cause between 8,000 and 26,000 new cases of asthma among their children.
- ✔ A recent study found that infants are three times more likely to die from Sudden Infant Death Syndrome (SIDS) if their mothers smoke during and after pregnancy. Infants are twice as likely to die from SIDS if their mothers stop during pregnancy and then resume following birth.

Workplace Smoke

- ✔ Workers exposed to second-hand smoke on the job are 34% more likely to get lung cancer.
- ✔ The simple separation of smokers from non-smokers within the same airspace may reduce, but cannot eliminate, the exposure of non-smokers to second-hand smoke.
- ✔ There is no safe level of exposure to a cancer-causing substance.
- ✔ Survey responses indicate that at least 4.5 million American workers experience great discomfort from exposure to second-hand smoke.
- ✔ The best method for controlling worker exposure to second-hand smoke is to eliminate tobacco use from the workplace and implement a smoking cessation program to support smokers who decide to quit. About 85% of businesses had adopted some form of smoking policies in 1991, up from 36% in 1986.

Dust Mite Control

Script for Asthma Counselor
Materials:
- Plastic Covers
- Handout for patient

Introduction:

"The allergy testing on your child as well as your answers to the baseline questions tell us that your child is allergic to dust mites. Dust mites are spider-like insects that live in pillow, mattresses, blankets, and rugs. You can't see them without a microscope, but there are thousands of them in everyone's home. The particles given off by dust mites cause very severe allergies. Most people who are allergic to dust are really allergic to dust mites. All night while you sleep, you breathe in pieces of the dust mites which get into your lungs and breathing tubes. In people who are allergic to dust mites, this causes asthma over time.

Because dust mites are such an important cause of asthma, it is very important that your child stop breathing these in while he/she sleeps. It is easy to cut down on the number of dust mites. Studies have shown that this improves asthma.

There are some simple steps you can take to help get rid of dust mites. These are listed in order of importance. Try to do as much as you can. Anything you do will be helpful. Do not feel that because you cannot do everything, it will not be helpful to do some of the things. This is the biggest mistake that most people make.

Step 1. Air Tight Bedding Covers

Covering bedding with special covers will keep your child from breathing in any dust mites or particles while he/she sleeps. These special covers are to be put on the pillow, the mattress, and the box spring. Once these are put on your child 's bed, he/she will no longer breathe in any dust mites or dust mite particles. your child should use only one pillow. If he/she needs extra pillows to breathe, these must also be covered with the special covers.

Give children covers and let them feel the material.

You can make your child more comfortable by having two layers of cotton on top of each special cover. For the pillows, put a zippered cotton pillow ticking over the special cover and then cover the ticking with a pillow case. For the mattress, you can put a quilted mattress pad over the special mattress cover and put a cotton sheet on over the quilted pad. Once a week, anything on top of the special cover should be washed to get rid of any new dust mites. The special covers can be wiped down with a damp cloth or sponge occasionally, but other than that, they can remain in place and don't have to be changed or washed. If you need to, you can wash them.

Step 2. Bedding

Use blankets that can be washed. Dust mites will continue to collect even in new bedding so blankets should be washed frequently in detergent and hot water (monthly if possible, but at least 4 times a year). This will get rid of any new dust mites. Washing in cold water is also helpful but it must be done more often — weekly.

Step 3. Pillows, Quilts, Comforters

Ask: Does your child have any pillows, quilts, or comforters that contain feathers or down? Down consists of very fine feathers. If yes: Feathers usually contain large amounts of dust mites so it is best to get rid of anything with feathers or down. Use a washable comforter instead. Feather pillows can be used only if they are covered with the special allergy covers.

Step 4. Humidifier

Do not use humidifiers or vaporizers of any kind in your child 's bedroom. The increased humidity increases the growth of dust mites and molds and will make your child worse. In the winter, if the bedroom air becomes dry, the best way to make it comfortable is to keep the bedroom cool. You can do this by turning down the heat or opening the window.

Step 5. Rugs, Carpets

Ask: Is there a rug or carpet on your child 's room? If yes: Remove the rugs from your child 's bedroom if you can. All rugs trap dust mites, no matter what they are made of, and even if the pile is short. If you cannot remove the carpeting, vacuum the carpet once a week. Vacuum when your child is not in the room.

Step 6. Vacuum Cleaners

Vacuum cleaners blow a lot of dust out the back which could make your child 's asthma worse. You can purchase special allergen-proof vacuum cleaner bags from one of the allergy catalogs which will prevent this from happening.

Step 7. Stuffed Animals

If your child wants to sleep with a stuffed animal have him/her select his/her favorite one; wash it to get rid of dust mites, and use only that one. Wash this stuffed animal four times a year.

Step 8. General Cleaning

You should try to remove everything from your child's bedroom that will collect dust, including stuffed furniture, drapes, old books and stuffed animals. Keep the walls and floors as clean and dust-free as possible at all times. Remember, the cleaner the room, the better your child will feel.

Environmental Control of Mold

Mold can be breathed in and start asthma attacks. Mold produced outdoors can enter the home. Other molds can grow in the home, especially in really humid areas, such as showers and basement.

How to Get Rid of Mold in the Home

In the entire home

- If you can get a gauge (hygrometer) to measure relative humidity, keep levels between 35 to 50%.
- If possible close the windows and use an air conditioner or dehumidifier when the humidity is above 60%.
- If you are using a humidifier in the winter, wash it weekly and change the water daily to prevent mold growth.
- Limit the number of houseplants. None should be in the bedroom.
- If you use a fireplace or wood burning stove, do not store firewood inside. Keep child away from live Christmas trees.

In the bedroom

- Follow steps that have been described to decrease dust exposure.
- Replace foam rubber pillows and mattresses that are more than 2 years old.
- Mold can grow in damp, dark closets. Prevent mold growth by using a dehumidifier and cleaning regularly with Clorox.

In the kitchen

- Use an exhaust fan to remove water vapor when cooking.
- Empty water pans below self-defrosting refrigerators weekly.
- Remove spoiling foods immediately
- Empty trash or garbage a lot to keep your home clean.

In the bathroom

- Use an exhaust fan or open window to remove humidity after showering. Use a squeegee to remove excess water from shower stall, tub, and tiles.
- Do not put carpet or a rug in the bathroom.
- If you see mold growth anywhere, you can wash with a mold killing solution like Roccol, Zephiran, or Clorox. You can buy Roccol in hardware store. You can buy Zephiran in a drug store. Use 1 oz. of 17% Zaphiran with 1 gallon of water.You can find Clorox at most grocery stores. Use 3/4 cup of Clorox in 1 gallon of water.

In the laundry room

- Vent clothes dryer by attaching a tube to the dryer and running it outside.
- Immediately after washing, hang clothes to dry.

In the basement

- Do not lay carpet and pad on a concrete floor. Vinyl is better.
- Correct seepage or flooding problems and remove any previously flooded carpets.
- Asthmatics should not have their bedroom on the basement level.

Intervention for Roach Elimination

Allergy to cockroach is a known cause of asthma. Your child has a positive skin reaction to cockroach, and may be allergic. Decreasing your child's exposure to cockroach will be helpful in controlling asthma. In order to do this, a substance called Avert (or other roach elimination substance) is sprayed in your home. It is safe for children and small animals, but it is extremely effective in killing cockroaches.

These are things you can do to improve the chances of removing cockroaches:

- Do not spray on your own because this may interfere with the effectiveness of the extermination.
- Remove as many alternative food sources as possible. For example, improve sanitation by cleaning up immediately after meals, keeping garbage in closed containers, and covering food and putting it away in cabinets.
- Get rid of old grocery bags, newspapers, soda cartons, cardboard boxes, and clutter.
- Before the exterminator arrives, remove glasses and dishes from cabinets.
- Repair faucets and puddles of water. Try to repair grouting in tile. Seal cracks and crevices around upper cabinets and pantry.
- Leave the extermination product alone after it is put down.
- Two weeks after the exterminator visits, vacuum or sweep up the dead cockroaches. Remember the cockroaches will not go away or die right away, but will slowly die over two weeks.

Intervention Steps

All children who have a positive skin test for roach allergy will be assigned to a special roach elimination intervention. Of course, this is voluntary for those who are eligible and will have no effect on their eligibility for other aspects of the intervention.

It is important, however, to convey to the caretakers that roach antigens are a very potent trigger for children who are roach sensitive and that the program will help them remove roaches from their homes. This general message will be conveyed during the second group session and will be a focus of special sessions with roach sensitive children early in the intervention period (the earlier, the better).

Caretakers should be encouraged to permit Asthma Counselors to arrange (at the program's expense) two visits from an exterminator who will apply "Avert" (or some other roach-elimination product). Roach elimination will begin during the core intervention.

Pre-cleaning

In order for the extermination to be effective all other food sources such as crumbs, water must be removed. This will require a thorough cleaning of the home, especially in the kitchen or other areas where food may be present.

First application

An appointment will be made for a pre-arranged exterminator. The Asthma Counselor and/or Coordinator will work with the family to arrange this appointment. Approximately 2 weeks after the application, the participant will be asked to clean again to remove dead roach antigen.

Second Application

Approximately one month following the first application, a second application will be arranged. The caretaker should again be reminded of the importance of thorough cleaning before and two weeks after to remove dead roach antigen and the visit will be coordinated as above.

General monitoring

All participants who have had extermination will be asked during follow-up individual session about the effectiveness of the extermination procedure.

Appendix

Physician Information Sheet

This sheet is to be included in the packet of materials sent to the child's primary care physician at the beginning of the intervention. The form should be completed by the physician and returned to the Asthma Counselor.

Physician Information Sheet

National Cooperative Inner City Asthma Study

Physician Name: _____

Office Address: _____

_____

Phone for appointments: _____ Best time to call: _____

Phone for questions: _____ Best time to call: _____

Fax: _____

What should the patient do if he/she has problems during the evenings or weekends?

Call: _____ Go to ER at _____

Which spacer do you prefer? Inspirease or Aerochamber (Circle One)

Would you like us to give the child a peak flow meter? Yes / No (Circle One)

Asthma Medication Plan

This form should be printed in triplicate (carbonless forms are preferable) and included in the first packet sent to the child's primary care physician. After completing the plan, the physician should keep one copy, give one copy to the caretaker and one copy should be returned to the Asthma Counselor. This form should be reviewed and discussed during each Individual Family Session.

Asthma Medication Plan for _____ Prepared by_____

GREEN ZONE: ALL CLEAR
Where your child should be every day.
- No asthma symptoms
- Able to run and play
- No cough or wheeze during sleep or

Peak flow between_____ (80-100% of personal best)

Use these medicines:

Medicine	How much	When to use it
☐ Cromolyn		
☐		
☐		
☐		

☐ Keep your child away from things that bring on asthma.

☐ Use _____,____minutes before running, playing, or sports.

YELLOW ZONE: CAUTION
This is NOT where your child should be every day. You need to increase the asthma medicines. Your child may have:
- Cough
- Wheezing
- Shortness of breath
- Chest tightness
- Disturbance of sleep or activity or

Peak flow between_____ (50-80% of personal best)

First use this medicine:

Medicine	How much	When to use it
☐ Albuterol		
☐		

NEXT, if your child feels better in 20-60 minutes and the peak flow is over _____ (70% of personal best)

Use this medicine:

Medicine	How much	When to use it
☐ Cromolyn		
☐		
☐		

☐ Keep using the green zone medicine(s)

But, if your child DOES NOT feel better in 20-60 minutes or the peak flow is under_____follow the RED ZONE PLAN.

Call the doctor if your child keeps going into the Yellow Zone. The Green Zone medicine plan will need to be changed to keep attacks from starting.

RED ZONE: MEDICAL ALERT
This is an emergency! Your child may:
- Be very short of breath
- Have frequent coughing
- Be unable to talk in sentences
- Have the chest pulling in with each breath
- Not be wheezing because not enough air can move in and out of the lung or

Peak flow under_____ (50% of personal best)

First use this medicine:

Medicine	How much	When to use it
☐ Albuterol		
☐		

Next, give oral steroids

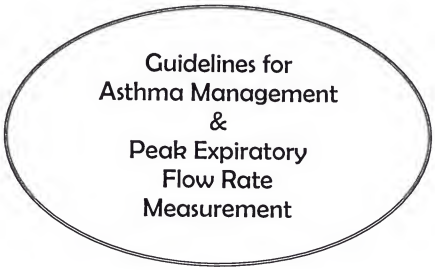
Medicine	How much	When to use it
☐		

Next, Call the doctor at _____ as soon as you have given the medications.

See the doctor RIGHT AWAY or go to the hospital if any of these things are happening:

-Lips or fingernails are blue
-Struggling to breathe
-No change 20- 30 minutes after taking the extra medicine and the peak flow is still under _____(50% of personal best)

Call the Doctor if your child is using albuterol or another bronchodilator more than every 3 hrs



These summaries should be included in the first packet sent to the child's primary care physician. The text is not written in such a way that these would be useful handouts for most intervention participants. These guidelines should also be read by the physician affiliated with the intervention who will be determining the appropriateness of returned medicine plans.

Guidelines for Asthma Management

Asthma is a disease of the airways characterized by chronic inflammation and bronchial hyperresponsiveness, processes which occur in the airways of even those with mild disease. Although generally considered a common and easily managed childhood illness, childhood asthma can pose many vexing and time consuming problems for the pediatrician. The following treatment summary is consistent with the Guidelines for the Diagnosis and Management of Asthma, National Asthma Education Program Expert Panel report (NIH publication No.91-3042) and attempts to concisely identify concepts of modern asthma treatment.

Treatment for asthma involves the following:

1. Avoidance of triggers (allergens, irritants)
2. Continuous administration of inhaled antiinflammatory medications
3. Intermittent use of inhaled bronchodilator for symptom rescue
4. Regular medical follow-up

I. Goals

The most important goals of asthma management are to avoid acute episodes and functional morbidity, such as recurrent wheezing, cough, days lost from school, impaired activity or disturbed sleep.

THREE EFFECTIVE QUESTIONS TO ASSESS ASTHMA CONTROL ARE:

1. How many days per week/month does your child have cough, wheeze, shortness of breath? How long do the symptoms last and what do you do for relief? (Wheezing more than 2 times per week that requires bronchodilator medication is MODERATE ASTHMA).

2. How often is your child's play, exercise, activity affected (slowed down) by asthma (cough, wheeze, shortness of breath)? Every time, most times, few times, almost never, not at all? (Activity disruption all or most of the time is MODERATE-SEVERE ASTHMA)

3. How many times per week/month does your child wake up in the middle of the night or early in the morning with cough, wheeze, shortness of breath? (more than 2 times per week is MODERATE ASTHMA).

II. Medical Management

Patients with mild asthma should use inhaled bronchodilator on an as needed basis. Children who have symptoms (wheeze, cough, play or sleep disruption) more than twice per week have moderate asthma and should be treated chronically with antiinflammatory medications.

Adjust treatment with antiinflammatory medications as needed to control symptoms and to decrease the need for regular bronchodilator. Regular office visits for re-evaluation of asthma management plan are generally necessary at least every three months; more frequent visits may be necessary until the patient's condition has stabilized.

Sodium Cromoglycolate (Cromolyn, Intal)

Intal is the first line antiinflammatory medication for management of childhood asthma. It is extremely safe and well-tolerated; there are no significant long term toxicities and acute adverse reactions (cough, wheeze, respiratory distress) exceedingly rare. The following doses are standard:

Intal, 1 vial, 20 mg nebulized 4 times/day
OR
Intal, 2 puffs (administered from metered dose inhaler) 4 times/day

If symptoms improve and are well-controlled after 6 weeks, the dose may be decreased to 3 times/day. A few patients will remain well-controlled on BID dosing. Intal should not be discontinued when the child is ill, nor should it be used intermittently.

Inhaled Corticosteroid

If symptoms are not well-controlled with Intal, i.e., cough, wheeze, play limitation or sleep disruption occur more than twice/week, add an inhaled corticosteroid to the medical care plan. The following dose of beclomethasone is recommended:

Beclomethasone(Beclovent, Vanceril) 2 puffs BID
The dose may be increased to 2 puffs qid OR $\leq$ 8.5 µg/kg/day.

Doses in this range are safe and not associated with growth suppression. If symptoms are not well-controlled using Intal and Beclomethasone, the patient should be referred to a pediatric allergist or pulmonologist for further evaluation.

Other corticosteroids may also be used; however, there is NOT dose equivalence on a per puff basis among the available steroid preparations. Moreover, Beclomethasone and Triamcinolone are approximately equipotent, while Flunisolide is twice as potent on a per µg basis. The following table outlines recommended doses; if good asthma control is not achieved with these doses, refer the patient to a specialist.

Preparation	µg per puff	Dose,puffs
Beclomethasone Vanceril, Beclovent	42	2 puffs, bid-qid
Triamcinolone Azmacort	100	2 puffs, bid
Flunisolide Aerobid	250	1-2 puffs, bid

Inhaled beta-agonist

Inhaled beta-agonists (albuterol, metaproterenol, terbutaline) are rescue medications; current recommendations are that these medications be used intermittently when needed for relief from cough, wheeze or shortness of breath. Oral administration of a beta-agonist is not generally recommended since the inhaled route is safer, more effective, has more rapid onset of action (and comparable duration of action), and fewer adverse reactions. If the need for rescue medication increases to multiple doses per day and totals greater than one canister used per month, asthma control is poor; more antiinflammatory medication and a search for exacerbating factors is indicated.

The following doses are standard:

Albuterol, (Ventolin, Proventil) 2 puffs every 3-4 hr

OR

Albuterol (5mg/ml) 0.15 mg/kg (minimum dose 1.25 mg, 0.25 ml) in 2cc saline every 3-4 hr (nebulized)

Other beta-agonist, such as terbutaline, metaproterenol may also be used, although albuterol is more beta-2 specific and has longer duration of action.

Holding Chambers/Spacer Devices

All pediatric patients should use a holding chamber/spacer device when prescribed a metered dose inhaler. This is especially true when inhaled corticosteroid are used. The holding chamber maximizes medicine delivery to the airways and minimizes deposition in the mouth. Children as young as 3 years can successfully be taught to use an Inspirease; infants can use the Aerochamber with face mask. See sheet accompanying the holding chamber for further instructions.

Commonly Asked Questions

1. When should oral beta-agonist (Ventolin, Proventil, terbutaline) be used? Oral beta-agonists are not recommended, since they are less effective than inhaled medications, have more adverse effects. Although the apparent ease of use makes it tempting to use these medications , especially in young children, even infants can use inhaled medications.

2. What is the appropriate dose of oral corticosteroid? There are few good studies on the best dose of oral corticosteroid for the treatment of acute asthma in children. However, based on studies in adults and existing studies in children, 1-2 mg/kg/day of prednisone or prednisolone given as a single morning dose for 3-7 days is usually sufficient to resolve most acute asthma episodes. The dose does not need to be tapered to avoid adrenal or immunosuppression if the duration of therapy is less than 10-14 days.

3. Should Intal and other medications be continued when oral corticosteroid are taken? All other medications, including Intal should be continued during steroid therapy.

4. Can oral corticosteroid be safely given to an asthmatic with acute wheezing and pneumonia or other infection? Yes, steroids can be given when infections, such as otitis, pneumonia are present. The infectious disease should also be treated.

5. What should I do if an asthmatic patient is taking corticosteroids and develops varicella? The vast majority of patients who take steroids and contract varicella tolerate the illness without serious problems. If the patient has been taking oral corticosteroids at a dose of 1 - 2 mg/kg/day (as a short course or takes $\geq$ 0.5 mg/kg every other day or daily on a chronic basis) during the incubation period for varicella, he or she should have the steroid dose reduced to the lowest possible dose to control the asthma and be treated with acyclovir (20 mg/kg given qid; max dose 800 mg qid) for 5-7 days. The patient should be observed carefully for signs of severe or disseminated disease. Consult with an allergist or pulmonologist if you have questions.

6. How are beta-agonists, Intal, and inhaled steroids used with a spacer device? All inhaled medications prescribed for children and delivered by metered dose inhaler (MDI) should be used with a spacer device. Only one medication should be delivered into the chamber at a time, but the same chamber may be used for all medications. The usual order of delivery is to give the beta-agonist first (if prescribed) followed by Intal or steroid.

Peak Expiratory Flow Rate (PEFR) Measurement

PEFR provides a simple, quantitative measure of large, central airway obstruction. The measurement is made with an inexpensive, hand-held portable device that patients use at home and in the office or emergency department. PEFR measurement is a useful adjunct in asthma management in that it can provide earlier detection and treatment of airway obstruction, and improve patient-physician communication and treatment decisions in the home setting or office based on an objective measure of lung function.

How to Use the Peak Flow Meter

Although performance of the maneuver is simple, it is highly dependent on patient effort, i.e., the patient's willingness to exhale as hard and fast as possible. There are several ways in which home PEFR monitoring may be utilized. The method the NCICAS study group recommends is for measures to be made intermittently around the time of acute symptoms, at the onset of upper respiratory infections or during any acute episodes. Your patient can then use the PEFR measures to adjust asthma medications according to your recommendations. In order for home PEFR monitoring to be effective, your patient and his/her family must understand a few key points and acquire several skills:

1. How and when to use the PEFR meter.
2. How to read and record the PEFR measures.
3. How to interpret the measurements.
4. How to respond to changes in PEFR.
5. What information to communicate to the clinician.

Directions for Use

Your patient has been given and ASSESS peak flow meter, like the one we sent to you. We advise that office and home monitoring be done using the same type of meter whenever possible. Have the patient bring her/his own meter to the office visit or keep extra meters (with disposable mouth pieces) of the same type in your office. To use the meter:

a. move the indicator to the bottom of the numbered scale.

b. Stand up and take a deep breath.

c. Place the meter in the mouth, behind the teeth and close lips around mouth piece.

d. blow out as hard and fast as possible.

e. write down the value.

f. repeat the process 2 more times.

g. record and/or report the highest of the 3 readings.

When to Use the PEFR Meter

Ask your patient to measure PEFR daily, and preferably twice daily, once in the morning and once in the afternoon or early evening. Patients should also make the measurement just after the use of a bronchodilator (if such medication is being used) and this information should be noted. As noted above, the NCICAS study group recommends that if you incorporate PEFR measurements into your care plan, they be made at the first sign of impending acute asthma, e.g., persistent cough, wheeze, shortness of breath, chest tightness; or at the onset of an upper respiratory tract infection. Measures should be continued for at least 1 week following the resolution of symptoms.

Interpreting the PEFR Measurement

Normal peak flow values are determined by the patient's age, gender and height. Nomograms or charts accompany the peak flow meter and provide the target PEFR based on these parameters. Some patients will have consistently higher and some lower than the predicted normal values when they are asymptomatic. For most children the predicted PEFR, based on height, age and gender, is a good approximation of the "personal best" measure, and should generally be considered the minimum acceptable PEFR measure.

A useful and easily understood model for interpreting PEFR values is the use of 3 "zones", corresponding to the red, yellow, green lights on a traffic signal. Depending on how much the measured PEFR varies from the predicted or personal best, the reading falls into one of the zones:

Green zone values (80-100% predicted) are normal;
Yellow zone values (50-80%) indicate that caution is necessary as an acute episode may be looming;
Red zone values (< 50%) indicates that immediate medical attention and action are necessary.

An action plan based on the PEFR zones and accompanying symptoms, and which includes instructions for home medical management, physician contact and emergency department utilization must accompany the use of the peak flow meter. However, remember that PEFR is a highly effort dependent test that measures only air flow in the large central airways. Improper technique, patient effort, or predominant obstruction in small airways will result in PEFR data which may be misleading.

Caretaker Report of the Asthma Medication Plan

This form is to be completed by those caretakers who are unable to obtain a completed medicine plan from the child's physician. It should be reviewed during each Individual Family Session.

CARETAKER REPORT OF
THE ASTHMA MEDICATION PLAN

Medications that child takes every day whether or not he/she is having asthma signs or symptoms

Name	How Much	How often/ For how many days
1)		
2)		
3)		
4)		
5)		

Medications that child takes if he/she has asthma signs or symptoms or an asthma attack

Name	How Much	How often/ For how many days
1)		
2)		
3)		
4)		
5)		

Has your doctor/health provider given you a phone number to call if you need emergency medical advice about your child's asthma? Yes / No

Has your doctor or health provider ever talked about using a peak flow meter? Yes / No

If yes: What is your child's best peak flow number? _____

Have your ever used peak flow numbers to change your child's asthma medicines? Yes / No

Asthma Counselor Evaluation (check which applies)

____ No care plan returned yet. Caretaker's report will be sent to doctor for review.

____ Parental Report is the same as doctor's Medicine Plan.

____ Parental Report is changed from doctor's Medicine Plan.
____ MD initiated changes ____ Caretaker/child initiated changes

How to Evaluate an Asthma Care Plan

This form should be read and completed by the physician affiliated with the study who is responsible for determining the appropriateness of completed medicine plans.

How to Evaluate an Asthma Care Plan

1. Review baseline or individual session data to determine the following:

In the previous 2 weeks the following has occurred:

a. Cough/wheeze/shortness of breath occurs ≥ 2 times per week (and requires treatment to resolve)

b. play/exercise/activities limited (by cough, wheeze, SOB) ≥ 2 times

c. sleep is disrupted by cough/wheeze ≥ 2 times per week

In the previous 2 months the following has occurred:

a. ≥ 2 ED or unscheduled visits for asthma

b. any hospitalization in past 2 months

c. ≥ 2 school absences due to asthma

2. If any one of the above are reported, treatment plan should include:

a. Daily administration of inhaled cromolyn sodium (INTAL) or nedocromil (TILADE) (TID-QID)

OR

Daily administration of inhaled corticosteroid (BID-QID).

OR

Every other day oral corticosteroid

AND

b. P.R.N. use of inhaled beta-agonist

AND

c. instructions on when/how to administer oral corticosteroids for acute symptoms

3. All care plans should include prescription of a spacer device if any medications are taken from an MDI.

4. Deficiencies in care plan include:
   a. medications prescribed are inappropriate for severity score
   b. no spacer prescribed for MDI use
   c. no instructions for when/how to administer oral corticosteroids

5. Asthma Counselor will need to determine if patient is using oral steroids frequently or over using inhaled bronchodilator. These data will be collected at first and subsequent care plan evaluations.

6. Record responses and perform scoring on next page.

CARE PLAN EVALUATION

Complete this table at each two-month evaluation

Date of evaluation_____

Date symptoms collected:

SYMPTOMS OCCURRING IN PREVIOUS 2 WEEKS	SCORE	UTILIZATION/MORBIDITY IN PREVIOUS 2 MONTHS	SCORE
COUGH, WHEEZE, SOB ≥ 2/week		≥ 2 UNSCHEDULED VISITS	
SLEEP DISRUPTION ≥ 2/week		ANY HOSPITALIZATION	
SLOW DOWN/STOP ACTIVITIES ≥ 2/week		≥ 2 SCHOOL ABSENCES DUE TO ASTHMA	
SCORE THIS COLUMN		SCORE THIS COLUMN	
TOTAL SCORE BOTH COLUMNS			

Score 2 for positive responses for all categories in column 1 AND 2, EXCEPT score 1 for "Play Limitation", score 0 for negative responses. Add score totals from both columns.

INTERPRETATION OF CARE PLAN SCORE

1. If total score is ≥ 2, treatment plan must include chronic antiinflammatory meds and prn inhaled bronchodilator. Oral bronchodilators are unacceptable. If total score is ≤ 1, treatment plan must include prn use of inhaled bronchodilator.

2. All plans should include instructions on use of oral corticosteroids.

3. All plans (or physician information sheet) must include spacer device if MDI (puffer, pump) is prescribed.

CHECK CORRECT RESPONSE AND ENTER DATE	YES	NO	DATE
A. Medications appropriate for score			
B. Spacer prescribed for MDI medications			
C. Instructions for oral corticosteroid or when to call M.D.			

PLAN EVALUATION	Y	ACTION FOR YES	DATE
PLAN IDEAL (A through C = YES)		NONE	
PLAN ACCEPTABLE (A&B = YES)		GET STEROID PLAN	
PLAN ACCEPTABLE (A&C = YES)		GET SPACER	
PLAN ACCEPTABLE (A ONLY = YES)		GET SPACER & STEROID	
PLAN NEEDS REVIEW/REVISION (A = NO)		SEND PMD LETTER; GET SPACER, STEROID PLAN	

If patient took oral steroids more than 10 days in past 2 weeks or takes oral steroids daily, or uses only inhaled bronchodilator ≥ 4 times a day (apart from exercise), notify PI.

(version: 1/4/95)

Asthma at School

This form should be included in the first packet sent to the child's primary care physician. After completing the form, copies should be given to the caretaker, Asthma Counselor and teacher/school nurse.

Asthma at School

Please keep a copy of this letter. Make some extra copies for all of your child's teachers.

Information on Asthma for Teachers

Dear Teacher,

Your student _____ is in an asthma program. Your student is working hard to help take care of his or her asthma. Our goal is to help the child do as much as he or she can at school. We need your help. Please encourage your student and help build his or her confidence. Please be calm and supportive if the child has an asthma attack.

Running, playing, and sports

Full participation in all physical activities to the limits of his or her tolerance is essential to every child's health. Children with asthma can participate in any sport. Please encourage the child to participate as much as possible and to rest when necessary.

Medicines

Medicine is one of the keys to controlling asthma. Some children take several kinds of medicine. Your student takes medicine at the times:

_____ [medicine name] — Every day at these times: _____

_____ [medicine name] — As soon as coughing, wheezing, or trouble breathing starts or the peak flow meter shows a low number.

_____ [medicine name] — Before sports or running and playing hard.

Your support of the child's efforts to be responsible and follow the medicine plan will help prevent attacks.

Side effects of asthma medicine may make it difficult for a child to concentrate. A child may appear to be hyperactive at times. Having the child practice relaxation techniques may help. Also, some children have increased urination, increased sweating, dryness or irritation of the mouth and throat, and nausea or stomach-ache while on asthma medicines. They have been encouraged to take medicine with food to help avoid stomach upset.

If asthma attack happens

Your student has been taught how to recognize signs that an attack is starting. Your student should do these three things at the first sign that an attack is starting:

(1) Take medicine
(2) Stop, rest and relax
(3) Tell an adult

If the child's breathing does not get better in 15 to 30 minutes after taking medicine, call the child's family at this number.

Emergency phone number for family: _____

Things that set off asthma attacks

There are some things in school that may make a child' asthma worse:

Chalk dust	Please do not clap erasers in the classroom. Some students may be better sitting away from the blackboard.
Animals	Please keep birds or animals with fur out of the classroom whenever possible.
Air pollution	Please give student a desk in a well ventilated part of the classroom but away from the windows or heat vents where dust, pollen, car exhaust or air pollution may make asthma worse.
Strong Odors	Please air out the classroom if you use strong smelling cleaning products, paint, insecticides, or air fresheners. Certain perfumes can set off asthma. Please do not wear strong perfume or aftershave.

Parents will follow these guidelines for deciding when their child should stay home from school.

Send the child to school, if the child:

- has just a stuffy nose, but no wheezing
- has mild wheezing that goes away after giving medicines
- can do the usual things at school
- has no trouble breathing

Keep the child home, if the child:

- has trouble breathing
- has a sore throat
- has a fever over 100 or a face that is very hot
- has wheezing which lasts even after giving medicine
- is weak or tired and would have trouble doing usual school activities

Children who miss school are encouraged to get missed work from classmates or the teacher.

If you have any questions about this letter or about asthma in general, please feel free to call the student's parents or doctor. Thank you for your support.

Child's parent or guardian: _____ **phone** _____

Child's doctor _____ **phone** _____

Physician's Care Plan
Letter 1

In some cases, medicine plans will be returned which are determined to be inadequate by the intervention affiliated physician. Under those circumstances, this letter should be sent to the child's primary care physician to request that the child's medical record be reviewed to determine if anti-inflammatory medications should be added to the medicine plan.

Physicians' Care Plan Letter 1
(Care Plan Returned and Inadequate for Symptoms)

RE: [CHILD'S NAME]

Dear Dr.

Your patient [CHILD'S NAME] is enrolled in the National Cooperative Inner-City Asthma Study(NCICAS), a multi-center study sponsored by the National Institutes of Health. This study is investigating strategies for improving asthma care and reducing asthma morbidity among inner-city children. One of the goals of the study is to increase utilization of inhaled anti-inflammatory medications, such as cromolyn sodium or corticosteroids as a primary agent for children with asthma. This is in line with the guidelines of the National Asthma Education Program and the International Consensus Report on Asthma.

[CHILD'S NAME] has recently reported increased asthma problems, and he/she might be a candidate for more intensive daily therapy with anti-inflammatory medications. Would it be possible for you to review [CHILD'S NAME]'S records to see if this is the case? The NCICAS is addressing other adherence related issues and has advised your patient to discuss the asthma symptoms and medicine plan with you. If you would like, [AC'S NAME], our NCICAS Asthma Counselor, would be happy to facilitate or arrange to have [CHILD'S NAME] make an appointment to see you. [AC NAME] can be reached at [AC PHONE NUMBER].

A concise information packet on asthma step care was included in your patient's initial enrollment packet; if you need another copy or other asthma related materials, please call the NCICAS office.

If you have any questions about this letter, NCICAS, or the new asthma treatment guidelines, please feel free to contact me.

Sincerely,

Principal Investigator
NCICAS

Physician's Care Plan Letter 2

Caretakers who do not receive a completed medicine plan should fill out the "Caretaker Report of the Asthma Medication Plan." If the intervention affiliated physician determines that the plan is adequate, based on the report of the child's symptoms, this letter should be sent to the primary care physician to repeat the request that the medicine plan be completed.

Physicians' Care Plan Letter 2
(No care plan returned; patients' report of care plan reviewed and adequate)

RE: [CHILD'S NAME]

Dear Dr.

Your patient [CHILD'S NAME] is enrolled in the National Cooperative Inner-City Asthma Study (NCICAS). One of the major goals of this study is to ensure that every patient has a written asthma care plan. To date, we have not yet received [CHILD'S NAME]'s care plan.

To help in establishing a plan for [CHILD'S NAME], we have recorded their description of the medications that they are taking. These medications are shown on the enclosed form. Please take a minute to check and make sure that the plan is correct. Please make any corrections that you feel are necessary, complete the enclosed form, and return it to us.

If there are discrepancies, you can call [CHILD'S NAME]'s Asthma Counselor [AC's NAME and NUMBER] and he/she will have [CHILD's NAME] contact you. If you prefer, you can handle the situation yourself. I am sure you agree that it is important that your patients fully understand your instructions and follow them as closely as possible.

We appreciate your cooperation in helping ensure the success of this important national study. If you have any questions about the asthma care plan of NCICAS, please feel free to contact me.

Sincerely,

Principal Investigator
NCICAS

Physician's Care Plan
Letter 3

Caretakers who do not receive a completed medicine plan should complete a "Caretaker Report of the Asthma Medication Plan." If the intervention affiliated physician determines that the plan is inadequate, based on the report of the child's symptoms, this letter should be sent to the primary care physician to repeat the request that the medicine plan be completed and suggest that the use of anti-inflammatory medicines be considered.

Physicians' Care Plan Letter 3
(No Care Plan Returned and Patient's Report Found Inadequate for Symptoms)

RE: [CHILD'S NAME]

Dear Dr.

Your patient [CHILD'S NAME] is enrolled in the National Cooperative Inner-City Asthma Study (NCICAS). Two of the major goals of this study are to ensure that every patient has a written asthma care plan and to increase utilization of inhaled anti-inflammatory medications, such as cromolyn sodium or corticosteroids as a primary agent for children with asthma.

To date, we have not yet received [CHILD'S NAME]'s care plan filled out by you. To help in establishing a plan for [CHILD'S NAME], we have recorded their caretaker's description of the medications that they are taking. These medications are shown on the enclosed form.

[CHILD'S NAME] has recently reported several asthma problems. Would it be possible for you to review [CHILD'S NAME]'S records to determine whether he/she might be a candidate for anti-inflammatory therapy? If so, would you be willing to see [CHILD'S NAME] in the office to review his/her medication regimen? If you would like, [AC'S NAME], our Asthma Counselor, would be happy to arrange to have [CHILD'S NAME] make an appointment to see you. [AC'S NAME] can be reached at [AC's NUMBER].

We appreciate your cooperation in helping ensure the success of this important national study. If you have any questions about this letter, NCICAS, or the new asthma treatment guidelines, please feel free to contact me.

Sincerely,

Principal Investigator
NCICAS

Ordering Supplies

This list details the resources used in the NCICAS intervention. Each program should feel free to support vendors who provide high quality products at a reasonable cost to the study or intervention participants.

Ordering Supplies

Below is a list of resources used for the NCICAS intervention. This list is provided for information purposes only and is not meant as an endorsement of any product or a requirement of the intervention.

Personal Best Peak Flow Meters
Health Scan Products, Inc.
908 Pomptom Avenue
Unit B2
Cedar Grove, NJ 07009-1292
(201) 857-3414
Fax: (201) 239-0831

"A Healthy Beginning: The Smoke-Free Guide for New Parents"
Local chapter of the American Lung Association

Aerochamber Spacer Devices
Monaghan Medical Corporation
102 W. Division Street
Syracuse, NY 13204
(800) 833-9653

Mattress and Pillow Covers
Allergy Control Products
96 Danbury Road
Ridgefield, CT 06877
(800) 422-DUST

"You Can Control Your Asthma"
(Child and Family Booklets)
Asthma and Allergy Foundation
(800) 778-2232

Each participant was asked to complete this survey periodically (approximately every 5th individual session) throughout the study. All responses were anonymous and preaddressed stamped envelopes were provided so that forms could be returned to the Data Coordinating Center for central collection.

National Cooperative Inner-City Asthma Study

Participant Survey

The National Cooperative Inner-City Asthma Study (NCICAS) is interested in who you view the services you have received from the program. Please read each of the statements listed below and use the following phrases to rate how you feel about the services.

Very satisfied 6
Satisfied 5
Somewhat satisfied 4
Somewhat diassatisfied . . . 3
Dissatisfied 2
Very dissatisfied 1

How satisfied are you with:

	Rate (1-6)
1. The professional attitude/behavior of your Asthma Counselor	____
2. The professional attitude/behavior of anyone else working with our programs	____
3. The Asthma Counselor's concern for you and helping with your problems	____
4. The Asthma Counselor's willingneses and ability to explain things to you	____

Please help us to improve the NCICAS program by telling us about any additional concerns or comments.

_____

_____

_____

_____

Survey for Participants with Poor Attendance

Six months into the program, participants who had not completed more than 2 sessions with the Asthma Counselor were sent this form. All responses were anonymous and preaddressed stamped envelopes were provided so that forms could be returned to the Data Coordinating Center for central collection.

National Cooperative Inner-City Asthma Study
Survey for Participants with Poor Attendance

Please circle the number which best matches how you feel.

	Not true	Somewhat True	Very True
The services at the asthma program are helpful.	1	2	3
I feel that I can call my asthma counselor when I have a question or problem.	1	2	3
I have been told where and when the sessions would be held.	1	2	3
The staff at the asthma program are professional and have treated me with respect.	1	2	3

What are the main reasons that you have not attended the asthma program in a while?

(CHECK ALL THAT APPLY)

____ It is not necessary because my child doesn't have bad asthma.
____ The asthma program is not helpful.
____ I do not have enough time
____ I have been too sick or my child's been too sick
____ It is too hard to get there, problems with transportation
____ I do not trust the Asthma Counselor or this program
____ I do not have a babysitter
____ I did not know how much time this program takes
____ I am only interested in the phone interviews. I don't want to meet with the Asthma Counselor
____ The program is not worth my time
____ I think we should be paid for going to the sessions
____ Other

Please describe:

_____

_____

_____

These certificates were handed out to all intervention and control group participants who attended a "close-out party" at the end of NCICAS. Certificates were mailed to those who were unable to attend.

The National Cooperative
Inner-City Asthma Study

A Research Program of the National
Institute of Allergy and Infectious Diseases

Certificate of Appreciation

Presented to

Your participation in our asthma program has made an important contribution to the understanding of this disease. We will use this knowledge to help your family and other families better control their asthma.

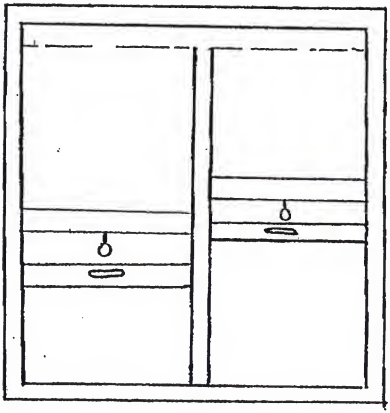
The Matching Game

These pictures may be reproduced into similar or larger form for use during Child Group Session 2.

Ask doctor for extra preventive medicine

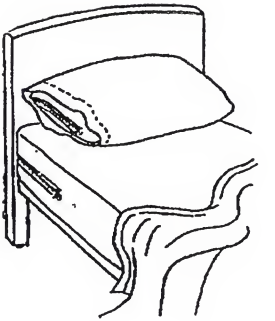
Talk to my family about keeping it out of our home

Relax. Calm down fast



Open the windows for an hour

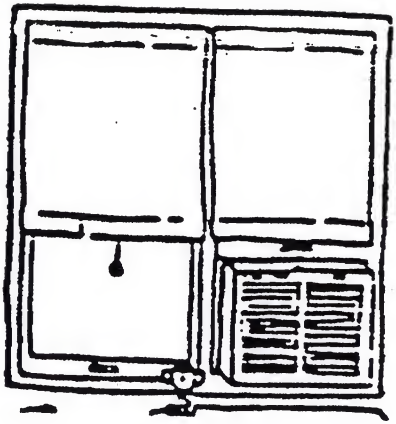
Wash hair before bed



Use a special mattress cover

Keep it out of my room

Move away or stay away from it when you are away from home



Go to rooms or places with an air conditioner

Cover your mouth and nose with a scarf

running
playing

smoke

pollen

sprays

laughing or
yelling hard

roaches

cat

dog

dust in stuffed animals

strong smells like cleaners and paints

hot, hot weather

perfume smells

cold weather

dust in beds and pillows

bird

Training Materials

The following attachments are samples of materials used in the physician-run training sessions for Asthma Counselors. Many of these materials are re-printed from "You Can Control Asthma" books for the child and family which are recommended for use in the group sessions. This packet is not meant to be a complete training guide, but rather a small sub-sample of materials used to summarize some of the key points needed to conduct this intervention.

Worksheet No. 20

Asthma Trigger Control Plan

Because you have asthma, your airways are very sensitive. They may react to things called triggers (stimuli that can cause asthma episodes). Your airways may become swollen, tighten up, and produce excess mucus in the presence of one or more of the triggers below. These triggers may make asthma symptoms worse or keep you from getting better. It's important to find out what your asthma triggers are. Learn ways to avoid them. If you cannot avoid triggers, and your medicine plan does not work as well as you and your doctor think it should, you both should discuss allergy shots (immunotherapy).

- Ask your doctor to help you find out what your triggers are.
- Ask your doctor for help in deciding which actions will help the most to reduce your asthma symptoms.
- Number each action item in order of importance. Carry out these actions first. Once you have completed these actions, move on to actions that are of lesser importance.
- Discuss the results of these efforts with your doctor.

Pollens and Molds (Outdoor)

- ☐ Stay indoors during the midday and afternoon when the pollen count is high.
- ☐ Use air conditioning, if possible.
- ☐ Keep windows closed during seasons when pollen and mold are highest.
- ☐ Avoid sources of molds (wet leaves, garden debris).

House Dust Mites

These are actions you should take to gain control of dust mites:

- ☐ Encase your mattress and box spring in an airtight cover.
- ☐ Either encase your pillow or wash it once a week every week.
- ☐ Avoid sleeping or lying on upholstered furniture.
- ☐ Remove carpets that are laid on concrete.
- ☐ Wash your bed covers, clothes, and stuffed toys once a week in hot (130°F) water.

These actions will also help you gain control of dust mites—but they are not essential:

- ☐ Reduce indoor humidity to less than 50 percent. Use a dehumidifier if needed.
- ☐ Remove carpets from your bedroom.
- ☐ Use chemical agents to kill mites or to change mite antigens in the house.
- ☐ Avoid using a vacuum or being in a room while it is being vacuumed.
- ☐ If you must vacuum, one or more of the following things can be done to reduce the amount of dust you breathe in.
  - Use a dust mask.
  - Use a central vacuum cleaner with the collecting bag outside the home.
  - Use a vacuum cleaner that has powerful suction.

Animal Dander (or flakes—from the skin, hair, or feathers of all warm-blooded pets including dogs, cats, birds, and rodents). There is no such thing as an allergen-free dog. The length of a pet's hair does not matter. The allergen is in the saliva, urine, and dander.

- ☐ Remove the animal from the house or school classroom.
- ☐ If you must have a pet, keep the pet out of your bedroom at all times.
- ☐ If there is forced-air heating in the home with a pet, close the air ducts in your bedroom.
- ☐ Wash the pet weekly.
- ☐ Avoid visits to friends or relatives with pets.
- ☐ Take asthma medicine (cromolyn or beta$_2$-agonist; cromolyn is often preferred) before visiting homes or sites where animals are present.
- ☐ Choose a pet without fur or feathers (such as a fish or a snake).
- ☐ Avoid products made with feathers, for example, pillows and comforters. Also avoid pillows, bedding, and furniture stuffed with kapok (silky fibers from the seed pods of the silk-cotton tree).
- ☐ Use a vacuum cleaner fitted with a HEPA (high-efficiency particulate air) filter.

Cockroach Allergen

- ☐ Use insect sprays; but have someone else spray when you are outside of the home.
- ☐ Air out the home for a few hours after spraying.
- ☐ Use roach traps.

Indoor Molds

- ☐ Keep bathrooms, kitchens, and basements well aired.
- ☐ Clean bathrooms, kitchens, and basements regularly.
- ☐ Do not use humidifiers.
- ☐ Use dehumidifiers for damp basement areas, with humidity level set for less than 50 percent but above 25 percent. Empty and clean unit regularly.

Tobacco Smoke

- ☐ Do not smoke.
- ☐ Do not allow smoking in the home.
- ☐ Have household members smoke outside.
- ☐ Do not allow any smoking in your bedroom. Encourage family members to quit smoking. Their doctor can help them quit.
- ☐ Use an indoor air-cleaning device (for smoke, mold, and dander).

Wood Smoke

- ☐ Avoid using a wood burning heat stove to heat your home. The smoke increases lower respiratory symptoms.
- ☐ Avoid using kerosene heaters.

How to Control Dust in Your Child's Bedroom

Dust in your home makes asthma worse for most children. In the dust there are tiny bugs called dust mites that are so small you can not see them. It is the dust mites that really bother people with asthma. The dust mites get into the rug, pillow, mattress, stuffed animals, couches and other things.

You need to control dust the most in places where your child sleeps and spends a lot of time, like the bedroom and the place where your child watches T.V. A plastic mattress cover may help your child more than anything else.

Take out these things from your child's bedroom.

- Rugs
- Soft chairs and couches
- Heavy curtains
- Stuffed animals
- Extra pillows
- Toys, books and clothes that are in the open and get dusty

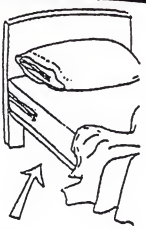
Give away or sell things that you do not need or want. Talk to your child before you make changes.

Take out the humidifier or vaporizer that makes water mist. The mist makes the dust mites multiply. Germs and mold can spread too. Only use one when your doctor says to.

Before

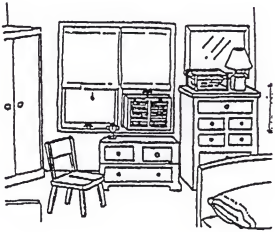
After

Protect your child from dust while your child sleeps



- Put plastic covers on the mattress and pillow. Plastic covers with zippers are best. It also helps to put a plastic cover on the couch where your child watches T.V.
- Pillows made of polyester are best. Do not use pillows made of feathers or foam rubber.
- Use blankets made of polyester. Do not use fuzzy wool blankets or covers made of feathers or down.
- If your child has a favorite stuffed animal, take out the old stuffing and put in new polyester stuffing or clean pantyhose.
- Do not keep things under the bed.

Other ways to keep down the dust



- Keep the closet door closed.
- Put clothes, toys and books in drawers or in boxes with tops.

Keep your child's room simple so it is easy to do these things every week.

- Wash sheets, blankets, the mattress pad and stuffed animals in hot water. Washing in hot water kills the dust mites.
- Wipe everything with a damp rag.
- Mop the floor with a damp mop.
- If you have wall-to-wall carpet, vacuum when your child is out of the room.

SUGGESTIONS FOR MINIMIZING DUST/MOLD EXPOSURE IN THE HOME

Dustproofing the Room

1. Keep the child's room free of upholstered furniture, feather pillows, down comforters. Use foam rubber, dacron, or other synthetic pillows.

2. Replace stuffed animals with washable, smooth plastic, or wood toys.

3. Encase the mattress, box spring and pillow in an impermeable cover.

4. Initially, move all furniture to the center of the room. Clean the room top to bottom -- moldings, lights, shelves, closets, etc. From then on, try to dust the room daily and thoroughly clean it weekly, when the child is not present. Clean the room with a vacuum cleaner, damp cloth, or oil mop. Special dust reducing vacuum cleaner bags are now available from National Allergy Supply 1-800-522-1448. Don't use a broom or duster -- they stir up dust.

5. Keep the floors bare, with only a cotton or synthetic (not wool) scatter/area rug. Keep rugs clean by washing them as needed.

6. Sheets, bedspreads, and curtains should be made of washable cotton or synthetic fabric and cleaned frequently. Window shades are preferable to curtains or venetian blinds, which collect dust. If you must use curtains, use plain light curtains, no drapes.

7. Wash bedding in hot water (above 140° F) about once a week to kill dust mites.

8. The closet and under the bed should be kept free of stored articles. The closet should hold only clothing in use.

9. If you already have a pet, keep it outside. If you are allergic to cats, bathe your cat in warm water once a month.

Reducing Mold/Mildew Exposure

1. Remove plants and aquariums from the room. (These can harbor molds.)

2. Cellars should be avoided as play areas.

3. Showers and tile areas should be cleaned well and sprayed with an antimold agent, such as Lysol.

4. If you use a vaporizer, empty it daily and clean it weekly with bleach or vinegar and water.

5. Avoid raking, burning, or jumping in leaves.

6. Avoid walking through weedy fields or vacant lots.

7. Avoid playing in the attic or with hay, straw, sawdust, and peatmoss.

FACT SHEET ON ASTHMA MEDICINES

Asthma medicines are one of the most powerful tools you have to control your child's asthma. By working with the doctor to find the medicines that help your child most, you can prevent asthma attacks. This fact sheet will help you and your child to talk to your doctor about asthma medicines.

NAMES	HOW THEY WORK	TIMING	POSSIBLE SIDE EFFECTS	HANDLING SIDE EFFECTS
Theophylline Type Bronchodilator Drugs (Theodur, Quibron, Slophyllin, Somophyllin, Slobid, Uniphyll)	Open tubes in the lungs	Starts to work about one hour after being taken; stops working after five or six hours; some capsules last 8 to 12 hours.	Stomache ache, vomiting	Take the medicine with food.
			Fast heart beat, headaches, dizziness, difficulty sleeping, increased urination, seizures (rare)	See the doctor.
Other Bronchodilator Drugs (Alupent, Ventolin, Proventil, Epinephrine, Terbutaline [inhalers or pills])	Open tubes in the lungs.	Starts to work 5 minutes to one hour after being taken; effects begin to wear off after about 4 hours.	Shakey hands or legs.	Often goes away in a few weeks, but try taking the medicine with food or milk.
			Fast heart beat.	See the doctor.
Cromolyn inhaler (Intal)	Prevents the symptoms of asthma.	Must be taken for a few weeks in order to work.	Rarely, cough.	Drink water or juice after inhaling the medicine.
Steroids (Prednisone, Medrol) Inhaled (Vanceril, Azmacort, Beclovent, AeroBid)	Open tubes in lungs by decreasing swelling in airways. Increased effectiveness of other medicines.	Controls symptoms 6 to 12 hours after taking; not for immediate relief of attack.	For Prednisone, stomach aches	Drink a glass of milk with the medicine.
			With continued use of Prednisone, slow growth, weight gain, bone problems, dependency on the medicine.	See the doctor.
			For inhalers, mouth infections	Rinse mouth with water after inhaling the medicine.

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Children's Asthma Center
Rainbow Babies and Childrens Hospita
March 1993

Worksheet No. 8

Beta$_2$-agonists

Action

Beta$_2$-agonists are bronchodilator medicines that open airways by relaxing the muscles in and around the airways that tighten during an asthma episode.

How They Are Prescribed

Beta$_2$-agonists come in many forms. There are also many ways to take them. Beta$_2$-agonists can be:

- Inhaled using a metered dose inhaler,
- Inhaled using a nebulizer,
- A powder-filled capsule that is inhaled by using a device called a dry powder inhaler,
- Swallowed as a liquid or tablet, or
- Taken as shots.

Inhaled beta$_2$-agonists stop symptoms of asthma episodes and prevent asthma symptoms that are started by exercise. They are sometimes used in small doses (no more than three to four times a day) to keep daily asthma symptoms under control.

Side Effects

Side effects include rapid heart beat, tremors, feeling anxious, and nausea. These side effects tend to leave as the body adjusts to the medicine. Serious side effects are rare, but may include chest pain, fast or irregular heart beat, severe headache or feeling dizzy, very bad nausea, or vomiting. Call your doctor right away if you have any of these symptoms.

Notes

Inhaled medicines are the first choice. They begin to work within 5 minutes and have fewer side effects. The medicine goes right to the lungs and does not easily go into the rest of the body.

Liquids or tablets begin to work within 30 minutes and last as long as 4 to 6 hours.

A child as young as 5 years of age can use the metered dose inhaler. A holding chamber or spacer device (a tube attached to the inhaler) can be attached to the inhaler to make it easier to use and can help even younger children use a metered dose inhaler.

Using a nebulizer to take the medicine works the same way as using an inhaler. A nebulizer is easier to use than an inhaler. It is good for a child under age 5, for a patient who has trouble using an inhaler, or for a patient with *severe* asthma episodes.

Shots are sometimes used in a doctor's office or an emergency room for severe episodes. They work very fast but only last 20 minutes.

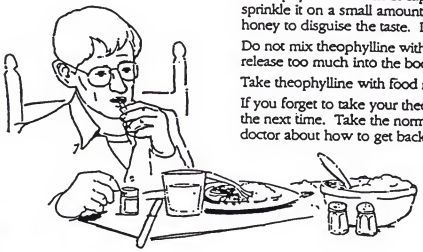
REMEMBER: Beta$_2$-agonists relieve symptoms, but they cannot reduce or prevent the swelling that causes the symptoms. When you have to use a beta$_2$-agonist a lot, it may be a sign that the swelling in your airways is getting worse. If you use a beta$_2$-agonist to relieve symptoms every day or if you use it more than three or four times in a single day, your asthma may be getting much worse. You may need another kind of medicine, and you need to discuss this with your doctor right away.

Worksheet No. 9

Theophylline

Action

Theophylline is a bronchodilator medicine that opens airways by relaxing the muscles in and around the airways that tighten during an asthma episode.



How It Is Prescribed

Theophylline comes in three forms:

- Tablets to be swallowed
- Capsules to be swallowed
- Liquid to be swallowed

Do not chew theophylline if taken in a tablet form, because too much of the time-released medicine will be released all at once.

If theophylline is taken in capsule form, you may open up the capsule and sprinkle it on a small amount of sweet, soft food such as yogurt, jelly, or honey to disguise the taste. Do not chew the capsule.

Do not mix theophylline with hot food. This will dissolve the medicine and release too much into the body.

Take theophylline with food rather than on an empty stomach.

If you forget to take your theophylline on time, do not take twice as much the next time. Take the normal amount as soon as you remember. Call your doctor about how to get back on schedule.

Side Effects

Side effects may include nausea, vomiting, stomach cramps, diarrhea, headache, muscle cramps, irregular heart beat, and/or feeling shaky or restless. Call your doctor if you have any of these side effects. It may mean that the amount of medicine you are taking should be changed. Mild side effects often go away after a few days.

Notes

Theophylline may be prescribed to be taken every 8 or every 12 hours. This makes it an easy medicine to use.

It takes some time for theophylline to build up in the blood stream, where it must stay at a constant amount to have a lasting effect. This means that it is important for you to take it at the time and in the amount that the doctor says.

Your doctor will do a simple blood test to see if the medicine is at the right level.

If your child has a fever or a virus (for example, chickenpox), or if your child starts taking an antibiotic, call your doctor right away. The usual dose may be too strong for your child during this time and your child may get sick from the theophylline.

Worksheet No. 10

Cromolyn

Action

Cromolyn is an anti-inflammatory medicine that prevents airways from swelling when they come in contact with an asthma trigger.

How It Is Prescribed

Cromolyn comes in three forms:

- A metered dose inhaler
- Liquid that is used in a nebulizer 
- A powder-filled capsule that is inhaled by using a device called a dry powder inhaler 

Cromolyn can be used in two ways:

- To prevent symptoms of asthma, it should be taken every day.
- To prevent symptoms of asthma that occur with exercise or contact with an asthma trigger (such as an animal), it can be taken 5 to 60 minutes before contact. The effects of the medicine last for 3 or 4 hours.

Side Effects

Cromolyn is safe to use in the treatment of asthma. The only side effect is a dry cough. You can avoid this side effect by rinsing your mouth and drinking a few sips of water after taking it.

Notes

Cromolyn cannot be used to stop an asthma episode once it has started. Cromolyn can only be used to keep an episode from starting.

Cromolyn does not work for every patient. It may take up to 6 weeks for the medicine to take effect.

If you use an inhaled $beta_2$-agonist and cromolyn, take the $beta_2$-agonist first.

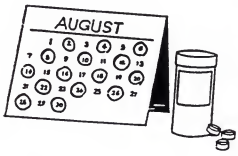
If you forget to take your cromolyn on time, take it as soon as you remember. Talk to your doctor about how to get back on your normal schedule.

Worksheet No. 11

Corticosteroids

Action

Corticosteroids are anti-inflammatory medicines that prevent and reduce swelling inside the airways and decrease the amount of mucus in the lungs.



How They Are Prescribed

Corticosteroids come in three forms:

- Inhaled using a metered dose inhaler
- Liquids or tablets to be swallowed (called oral corticosteroids)
- Shots

Inhaled corticosteroids are taken with a metered dose inhaler. When taken at the proper doses, they are safe medicines that work well for patients with moderate or severe asthma. They reduce the sensitivity of the airways to triggers, and they prevent swelling in the airways.

Liquid and tablet (oral) corticosteroids are used in serious asthma episodes to reduce swelling of the airways and prevent the episodes from getting even more severe. For people with moderate asthma, oral corticosteroids are sometimes used for 3 to 7 days and then stopped. People with very severe asthma may take oral corticosteroids every other morning or daily.

Shots of corticosteroids are used only in a doctor's office or emergency room for serious episodes.

Side Effects

Inhaled corticosteroids may cause a yeast infection in the mouth or bother the upper airways and cause coughing. There are two things to do to keep these things from taking place. Use a spacer device (an attachment on the inhaler) and rinse out your mouth after you take the medicine.

Using oral corticosteroids for a short time may cause different side effects. You may have a better appetite, fluid retention, weight gain, rounding of the face, changes in mood, and high blood pressure. These will stop when you quit taking the medicine, but **do not** stop taking this medicine without first talking to your doctor.

Oral corticosteroids used for a long time may have bad side effects such as high blood pressure, thinning of the bones, cataracts, muscle weakness, and slower growth in children. Because of these side effects, doctors should only use oral corticosteroids for a long time if a patient's asthma is serious.

Notes

Corticosteroids are not the same as the steroids used by some athletes. Inhaled corticosteroids and oral corticosteroids taken for a short time do not damage the liver and they do not cause other long-lasting changes in the body.

Children as young as 3 years of age can use inhaled corticosteroids if a holding chamber or spacer device is attached to the metered dose inhaler. Ask your doctor about this.

When oral corticosteroids are used to treat serious asthma episodes, they take about 3 hours to start working and are most effective in 6 to 12 hours.

Talk to your doctor about what to do when you forget to take your medicine on time.

Worksheet No. 12

Correct Use of a Metered Dose Inhaler

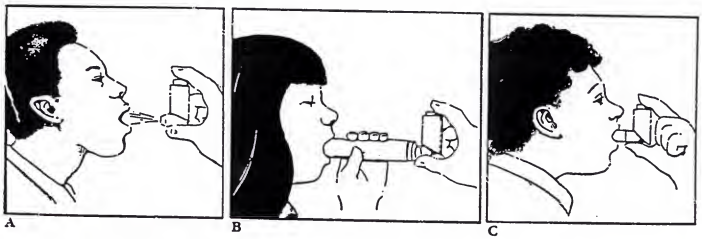
Using a metered dose inhaler is a good way to take asthma medicines. There are few side effects because the medicine goes right to the lungs and not to other parts of the body. It takes only 5 to 10 minutes for the medicine to have an effect compared to liquid asthma medicines, which can take 1 to 3 hours. Inhalers can be used by all asthma patients age 5 and older. A spacer or holding chamber attached to the inhaler can help make taking the medicine easier for even younger children. These devices are helpful to people having trouble using an inhaler. **Worksheet No. 13** tells about spacers.

The inhaler must be cleaned often to prevent buildup that will clog it and reduce how well it works.

- The guidelines that follow will help you use the inhaler the right way.
- Ask your doctor or nurse to show you how to use the inhaler.

Using the Inhaler

1. Remove the cap and hold the inhaler upright.
2. Shake the inhaler.
3. Tilt your head back slightly and breathe out.
4. Use the inhaler in any one of these ways. (A is the best way, but C is okay if you are having trouble with A or B.)
   A. Open mouth with inhaler 1 to 2 inches away
   B. Use spacer (**Worksheet No. 13** tells how to use an inhaler with a spacer)
   C. In the mouth



A B C

5. Press down on the inhaler to release the medicine as you start to breathe in slowly.
6. Breathe in *slowly* for 3 to 5 seconds.
7. *Hold* your breath for 10 seconds to allow the medicine to reach deeply into your lungs.
8. Repeat puffs as prescribed. Waiting 1 minute between puffs may permit the second puff to go deeper into the lungs.

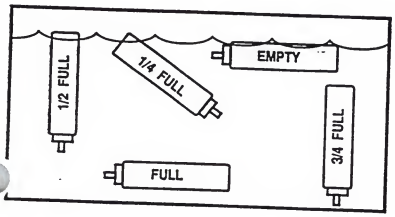
Note: Dry powder capsules are used differently. To use a dry powder inhaler, close your mouth tightly around the mouthpiece and inhale very fast.

Cleaning

1. Once a day clean the inhaler and cap by rinsing it in warm running water. Let it dry before you use it again. Have another inhaler to use while it is drying.
2. Twice a week wash the plastic mouthpiece with mild dishwashing soap and warm water. Rinse and dry well before putting it back.

Checking How Much Medicine Is Left in the Canister

1. If the canister is new, it is full.
2. An easy way to check the amount of medicine left in your metered dose inhaler is to place the canister in a container of water and observe the position it takes in the water.



Worksheet No. 13

Spacers

Unless you use your inhaler the right way, much of the medicine may end up on your tongue, on the back of your throat, or in the air. Use of a spacer or holding chamber can help this problem.

A spacer or holding chamber is a device that attaches to a metered dose inhaler. It holds the medicine in its chamber long enough for you to inhale it in one or two slow deep breaths. The spacer makes it easy for you to use the medicines the right way (especially if your child is young or you have a hard time using just an inhaler). It helps you not cough when using an inhaler. A spacer will also help prevent you from getting a yeast infection in your mouth (thrush) when taking inhaled steroid medicines.

There are many models of spacers or holding chambers that you can purchase through your pharmacist or a medical supply company. Ask your doctor about the different models.

How To Use a Spacer

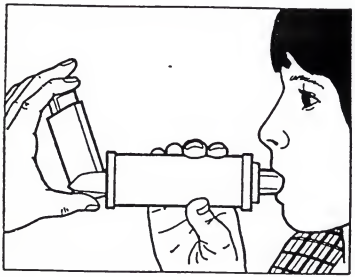
1. Attach the inhaler to the spacer or holding chamber as explained by your doctor or by using the directions that come with the product.
2. Shake well.
3. Press the button on the inhaler. This will put one puff of medicine in the holding chamber.
4. Place the mouthpiece of the spacer in your mouth and inhale slowly. (A face mask may be helpful for a young child.)
5. Hold your breath for a few seconds and then exhale. Repeat steps 4 and 5 *two* more times.
6. If your doctor has prescribed two puffs, wait between puffs for the amount of time he or she has directed and repeat steps 4 and 5.

SPACER DEVICES FOR USE WITH METERED DOSE INHALERS

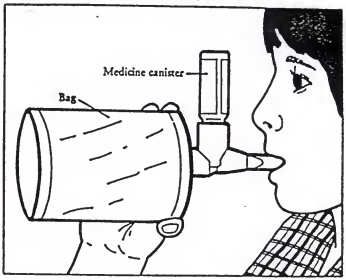
What is a spacer device and how does it work?

Two of the most commonly used spacer devices are pictured below. Spacer devices are portable drug delivery systems which help metered dose inhalers (spray inhalers) deliver medication to the lungs. They are designed to make using inhalers easier. Spacer devices also allow more of the medication to be delivered further into the small airways which will help better control the child or adult's asthma. By using spacer devices, less medication is wasted and most people feel they receive better results.

Aerochamber Holding Chamber



InspirEase Holding Chamber



If a spacer device has been prescribed for you, please make sure you:

1) follow your doctor's or the manufacturer's directions for use,
2) keep your spacer clean by rinsing it in hot water every few days and washing it with soap and hot water once a week, allowing it to air dry overnight,
3) let your doctor know if your spacer no longer works and you need a new one and
4) bring your spacer to your doctor's appointments so he or she can check to make sure that you are still using it properly.

Rainbow Babies and Children's Hospital
Children's Asthma Center 1993

USING A NEBULIZER (AEROSOL MACHINE) AT HOME

A nebulizer is a machine that changes liquid medication into a fine mist for aerosol delivery. The medication can then be inhaled into the airways of the lungs where it is needed. This method allows the medication to work more quickly and minimizes side effects.

Nebulizers may look complicated but they are actually simple to use. Unlike metered dose inhalers, they don't require hand/breath coordination skills.

To operate the nebulizer, you should follow the directions from the manufacturer or home care company.

Tips to using a nebulizer:

* A mouthpiece may be preferable to a mask if the child can concentrate on only mouth breathing. The masks allow more medication loss and the nose can also trap some medication.
* The mouthpiece should be positioned behind the child's teeth to prevent blockage of the flow of medication. When inhaling the medication, you should not see mist coming out of the nebulizer tube.
* Children should be instructed to hold their breath for 1 - 5 seconds after every 3 - 5 breaths for increased benefit from the medication.
* If the medication takes longer than 15 minutes to nebulize, or if it is misting poorly, check to see if the tube is blocked or the compressor is not working well.
* It is normal for a small amount of nebulizer solution to remain in the cup after nebulization.
* Pause and remove the mouthpiece or mask of you become tired or light-headed during the treatment. Turn off the compressor while resting to prevent medication waste.
* If your child's condition fails to improve on the nebulization schedule the doctor has recommended or if asthma episodes become more frequent or severe, call your doctor for instructions about what to do next.

How to clean the nebulizer cup:

It is important to rinse out the nebulizer cup after every aerosol treatment and thoroughly clean and disinfect it once or twice a week. The nebulizing machine is usually maintenance free, requiring only that the filter be washed or replaced once a month.

Tips for cleaning:
* Once or twice a week, the cup should be given a thorough cleansing. This can be done either as directed by the home care company or soaking the pieces for 10 minutes in a solution of 1 cup white vinegar and 3 cups water. It should then be rinsed thoroughly under flowing warm water.
* The cleaning should be done in a pan or bowl, rather than a sink. Almost every sink has some grease residue and this could clog the nebulizer.
* Allow the nebulizer cup to air dry. Towels can leave particles or bacteria in the cup.
* Try to keep a spare nebulizer cup on hand. This way you will always have one that's clean, dry and ready for use.

Children's Asthma Center
Rainbow Babies and Children's Hosp
March 1993

Worksheet No. 14

Use and Care of a Nebulizer

A nebulizer is a device driven by a compressed air machine. It allows you to take asthma medicine in the form of a mist (wet aerosol). It consists of a cup, a mouthpiece attached to a T-shaped part or a mask, and thin, plastic tubing to connect to the compressed air machine. It is used mostly by three types of patients:

- Young children under age 5
- Patients who have problems using metered dose inhalers
- Patients with severe asthma

A nebulizer helps make sure they get the right amount of medicine.

A routine for cleaning the nebulizer is important because an unclean nebulizer may cause an infection. A good cleaning routine keeps the nebulizer from clogging up and helps it last longer.

Directions for using the compressed air machine may vary (check the machine's directions), but generally the tubing has to be put into the outlet of the machine before it is turned on.

How to Use a Nebulizer

1. Measure the correct amount of normal saline solution using a clean dropper and put it into the cup. If your medicine is premixed, go to step 3.
2. Draw up the correct amount of medicine using a clean eyedropper or syringe and put it into the cup with the saline solution. Once you know your number of drops, you can count them as a check on yourself.
3. Fasten the mouthpiece to the T-shaped part and then fasten this unit to the cup ***OR*** fasten the mask to the cup. For a child over the age of 2, use a mouthpiece unit because it will deliver more medicine than a mask.
4. Put the mouthpiece in your mouth. Seal your lips tightly around it ***OR*** place the mask on your face.
5. Turn on the air compressor machine.
6. Take slow, deep breaths in through the mouth.
7. Hold each breath 1 to 2 seconds before breathing out.
8. Continue until the medicine is gone from the cup (approximately 10 minutes).
9. Store the medicine as directed after each use.

Cleaning the Nebulizer

Don't forget: Cleaning and getting rid of germs prevents infection. Cleaning keeps the nebulizer from clogging up and helps it last longer.

After Each Use

1. Remove the mask or the mouthpiece and T-shaped part from the cup. Remove the tubing and set it aside. The tubing should not be washed or rinsed. Rinse the mask or mouthpiece and T-shaped part—as well as the eyedropper or syringe—in warm running water for 30 seconds. Use distilled or sterile water for rinsing, if possible.
2. Shake off excess water. Air dry on a clean cloth or paper towel.
3. Put the mask or the mouthpiece and T-shaped part, cup, and tubing back together and connect the device to the compressed air machine. Run the machine for 10 to 20 seconds to dry the inside of the nebulizer.

4. Disconnect the tubing from the compressed air machine. Store the nebulizer in a ziplock plastic bag.
5. Place a cover over the compressed air machine.

Once Every Day

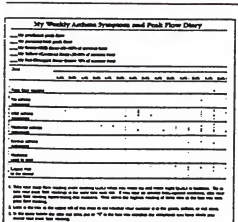
1. Remove the mask or the mouthpiece and T-shaped part from the cup. Remove the tubing and set it aside. The tubing should not be washed or rinsed.
2. Wash the mask or the mouthpiece and T-shaped part—as well as the eyedropper or syringe—with a mild dishwashing soap and warm water.
3. Rinse under a strong stream of water for 30 seconds. Use distilled (or sterile) water if possible.
4. Shake off excess water. Air dry on a clean cloth or paper towel.
5. Put the mask or the mouthpiece and T-shaped part, cup, and tubing back together and connect the device to the compressed air machine. Run the machine for 10 to 20 seconds to dry the inside of the nebulizer.
6. Disconnect the tubing from the compressed air machine. Store the nebulizer in a ziplock plastic bag.
7. Place a cover over the compressed air machine.

Once or Twice a Week

1. Remove the mask or the mouthpiece and T-shaped part from the cup. Remove the tubing and set it aside. The tubing should not be washed or rinsed. Wash the mask or the mouthpiece and T-shaped part—as well as the eyedropper or syringe—with a mild dishwashing soap and warm water.
2. Rinse under a strong stream of water for 30 seconds.
3. Soak for 30 minutes in a solution that is one part distilled white vinegar and two parts distilled water. Throw out the vinegar water solution after use; do not reuse it.
4. Rinse the nebulizer parts and the eyedropper or syringe under warm running water for 1 minute. Use distilled or sterile water, if possible.
5. Shake off excess water. Air dry on a clean cloth or paper towel.
6. Put the mask or the mouthpiece and T-shaped part, cup, and tubing back together and connect the device to the compressed air machine. Run the machine for 10 to 20 seconds to dry the inside of the nebulizer thoroughly.
7. Disconnect the tubing from the compressed air machine. Store the nebulizer in a ziplock plastic bag.
8. Clean the surface of the compressed air machine with a well-wrung, soapy cloth or sponge. You could also use an alcohol or disinfectant wipe. NEVER PUT THE COMPRESSED AIR MACHINE IN WATER.
9. Place a cover over the compressed air machine.

Worksheet No. 15

How To Use a Peak Flow Meter


My Weekly Asthma Symptom and Peak Flow Diary

A peak flow meter is a device that measures how well air moves out of your lungs. During an asthma episode the airways of the lungs begin to narrow slowly. The peak flow meter can be used to find out if there is narrowing in the airways hours—even days—before you have any symptoms of asthma. By taking your medicine early (before symptoms) you may be able to stop the episode quickly and avoid a serious episode of asthma. Peak flow meters are used to check your asthma the way that blood pressure cuffs are used to check high blood pressure.

The peak flow meter can also be used to help you and your doctor:

- Decide if your medicine plan is working well.
- Decide when to add or stop medicine.
- Decide when to seek emergency care.
- Identify triggers—that is, what causes your asthma symptoms to increase.
- Talk about your asthma with more knowledge.

All patients age 5 and older who have moderate or severe asthma should think about using a peak flow meter. Some children as young as age 3 can also use it. Ask your doctor or nurse to show you how to use a peak flow meter.

How to Use a Peak Flow Meter

1. Place the indicator at the base of the numbered scale.
2. Stand up.
3. Take a deep breath.
4. Place the meter in your mouth and close your lips around the mouth piece. Do not put your tongue inside the hole.
5. Blow out as hard and fast as you can.
6. Write down the number you get.
7. Repeat steps 1 through 6 two more times.
8. Write down the highest of the three numbers achieved.

Find Your Personal Best Peak Flow Number

Your *personal best* peak flow number is the highest peak flow number you can achieve over a 2-week period when your asthma is under good control. Good control is when you feel good and do not have any asthma symptoms.

Each patient's asthma is different and your best peak flow may be higher or lower than the average *usual* number for someone of your height, weight, and sex. This means that it is important for you to find your own personal best peak flow number. Your own medicine plan needs to be based on your own personal best peak flow number.

To find out your personal best peak flow number, take peak flow readings:

- Every day for 2 weeks
- Mornings and evenings (when you wake up and about 10-12 hours later)
- Before and after taking inhaled beta$_2$-agonist (*if* you take this medicine)
- As instructed by your doctor

Write down these reading on **Worksheet No. 16: My Weekly Asthma Symptom and Peak Flow Diary.** Ask your doctor for a copy.

The Peak Flow Zone System

Once you know your personal best peak flow number, your doctor will give you the numbers that tell you what to do. The peak flow numbers are put into zones that are set up like a traffic light. This will help you know what to do when your peak flow number changes. For example:

Green Zone (80 to 100 percent of your personal best number) signals ***all clear.*** No asthma symptoms are present, and you may take your medicines as usual.

Yellow Zone (50 to 80 percent of your personal best number) signals ***caution.*** You may be having an episode of asthma that requires an increase in your medicines. Or your overall asthma may not be under control, and the doctor may need to change your medicine plan.

Red Zone (below 50 percent of your personal best number) signals a ***medical alert.*** You must take an inhaled beta$_2$-agonist right away and call your doctor immediately if your peak flow number does not return to the Yellow or Green Zone and stay in that zone.

Record your personal best peak flow number and peak flow zones on the upper left hand corner of **Worksheet No. 16: My Weekly Asthma Symptom and Peak Flow Diary.**

Use the Diary To Keep Track of Your Peak Flow

Write down your peak flow number on the diary every day, or as instructed by your doctor.

Discuss With Your Doctor What To Do When Peak Flow Numbers Change

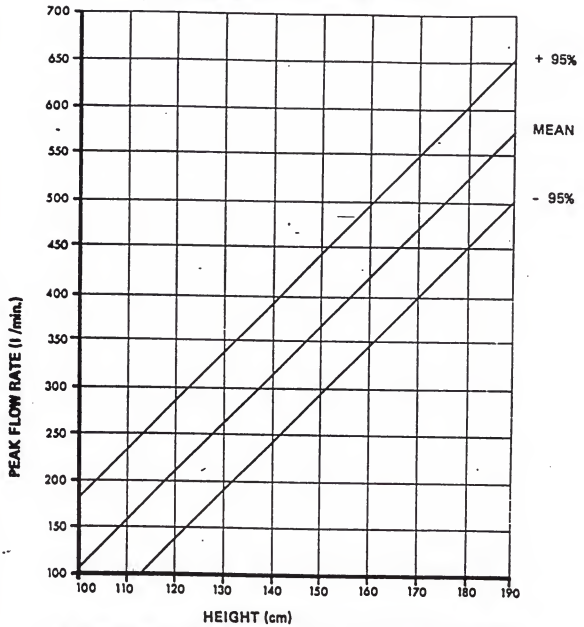
The most important thing about peak flow is how much it changes from your personal best number and from one reading to another.

DON'T FORGET:

- A decrease in peak flow of 20 to 30 percent of your personal best may mean the start of an asthma episode.
- When this happens

  —Follow your asthma control plan for treating an asthma episode.

Nomogram redrawn from original data of
Godfrey et al Brit.J.Dis.Chest, 64, 15 (1970)



This nomogram results from tests carried out by Dr. S. Godfrey and his colleagues on a sample of 382 normal boys and girls aged 5 to 18 years. Each child blew 5 times into a standard Wright Peak Flow Meter and the highest reading was accepted in each case. All measurements were completed within a 6-week period. The outer lines of the graph indicated that the results of 95% of the children fell within these boundaries.